

2012 - JCR Evaluation Form

SPECIES: Mule Deer
 HERD: MD642 - DUBOIS
 HUNT AREAS: 128, 148

PERIOD: 6/1/2012 - 5/31/2013

PREPARED BY: GREG
 ANDERSON

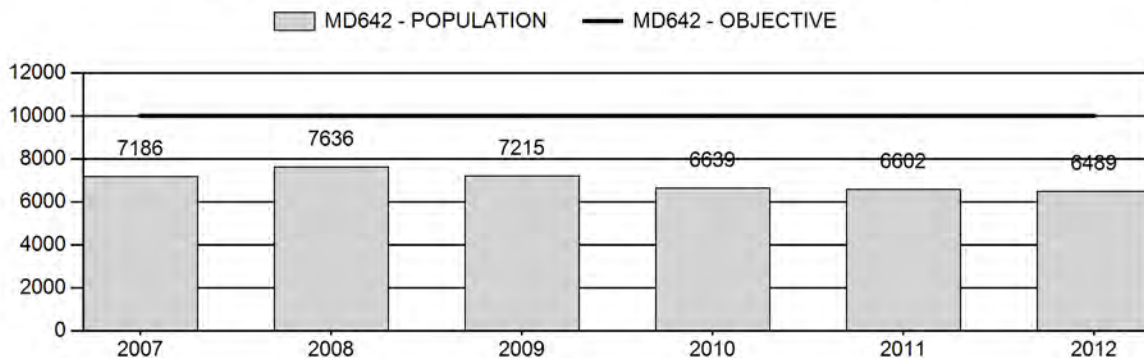
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	7,056	6,489	6,305
Harvest:	586	397	360
Hunters:	1,311	1,140	1,000
Hunter Success:	45%	35%	36%
Active Licenses:	1,406	1,179	1,050
Active License Percent:	42%	34%	34%
Recreation Days:	7,974	6,764	6,300
Days Per Animal:	13.6	17.0	17.5
Males per 100 Females	24	25	
Juveniles per 100 Females	57	70	

Population Objective: 10,000
 Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: -35.1%
 Number of years population has been + or - objective in recent trend: 10
 Model Date: 4/24/2013

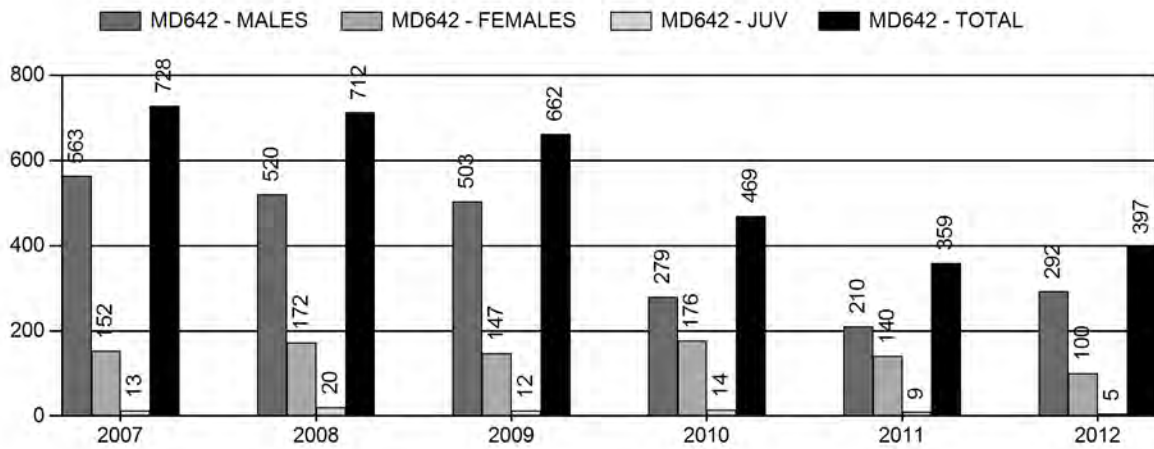
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females ≥ 1 year old:	3%	3%
Males ≥ 1 year old:	25%	21%
Juveniles (< 1 year old):	1%	1%
Total:	6%	5%
Proposed change in post-season population:	-2%	-3%

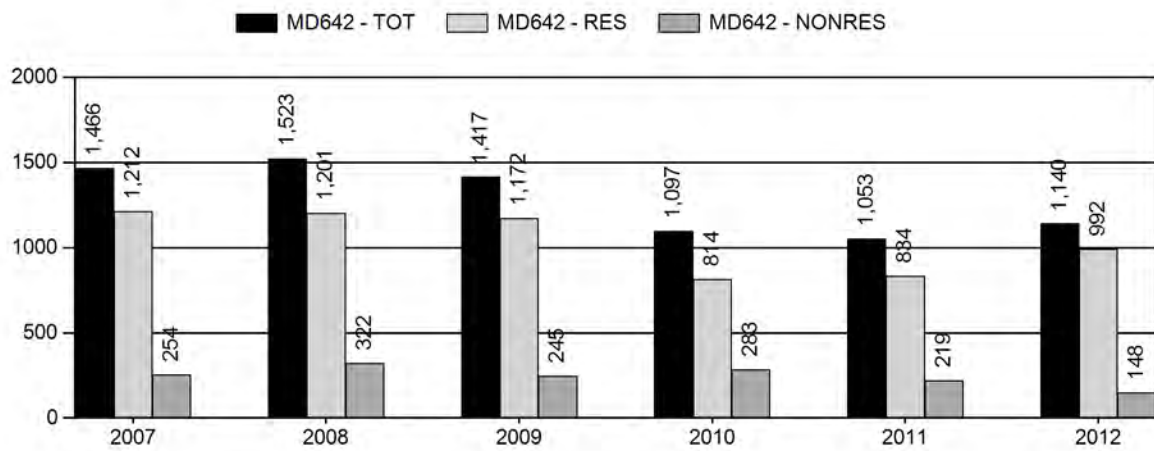
Population Size - Postseason



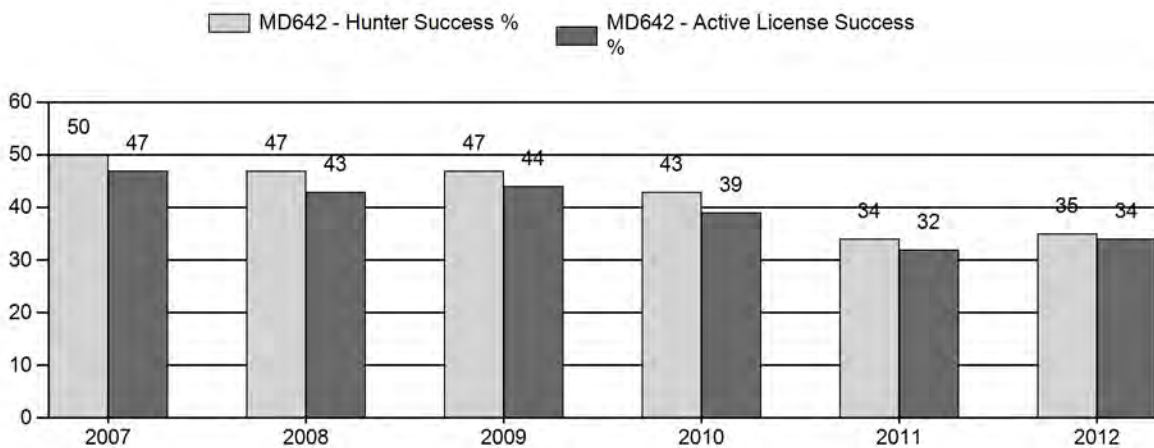
Harvest



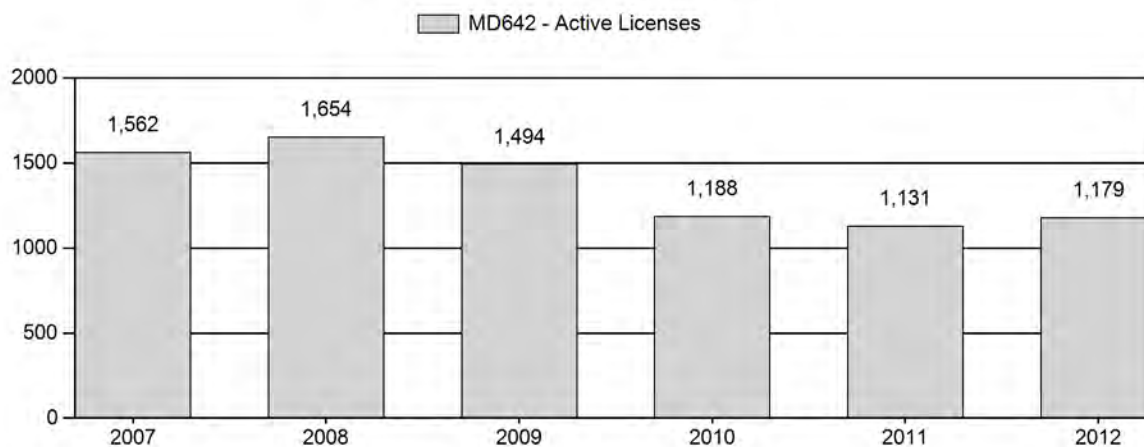
Number of Hunters



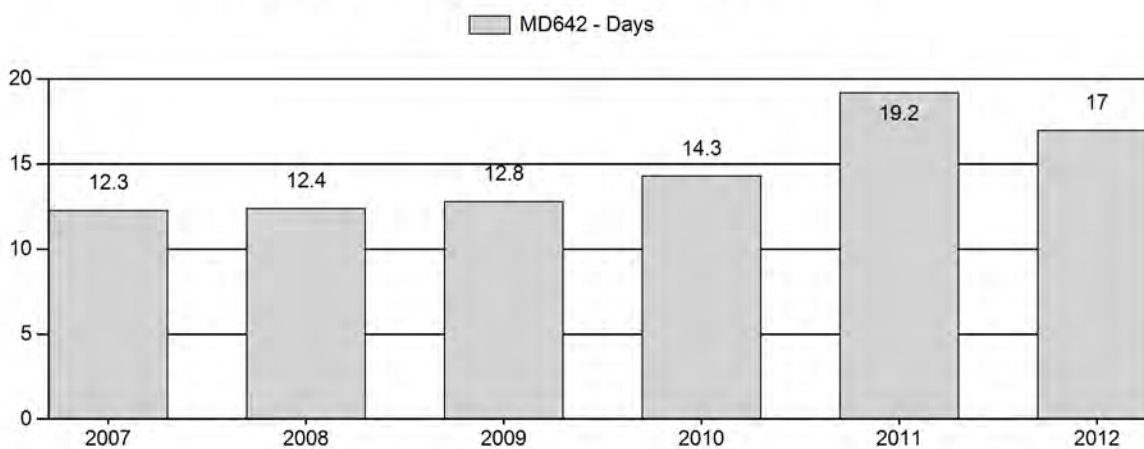
Harvest Success



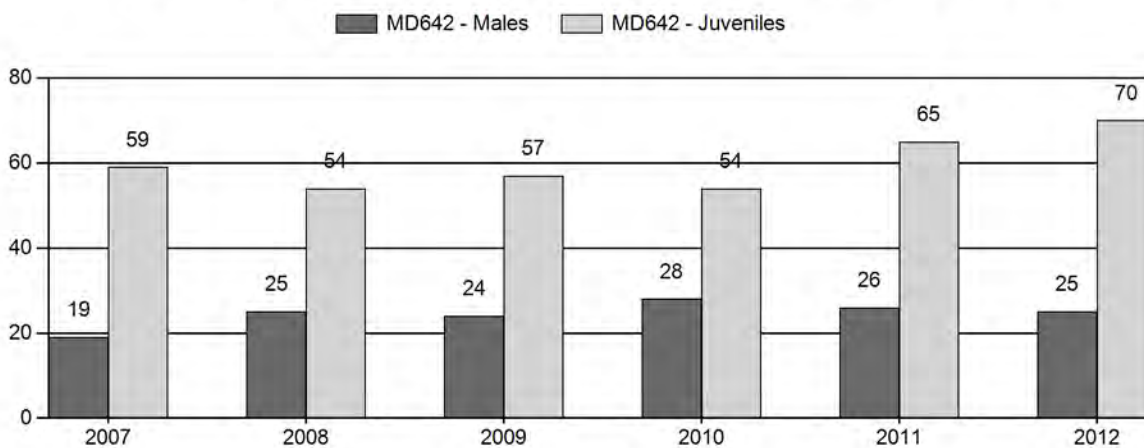
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Mule Deer Herd MD642 - DUBOIS

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	7,186	41	85	126	11%	671	56%	398	33%	1,195	950	6	13	19	± 2	59	± 4	50
2008	7,636	54	86	140	14%	556	56%	302	30%	998	852	10	15	25	± 3	54	± 5	43
2009	7,215	64	117	181	13%	765	55%	434	31%	1,380	928	8	15	24	± 2	57	± 4	46
2010	6,639	61	128	189	15%	683	55%	370	30%	1,242	876	9	19	28	± 3	54	± 4	42
2011	6,602	36	52	88	14%	340	52%	221	34%	649	1,073	11	15	26	± 4	65	± 7	52
2012	6,489	26	78	104	13%	415	51%	291	36%	810	1,232	6	19	25	± 3	70	± 6	56

**2013 HUNTING SEASONS
DUBOIS MULE DEER (MD 642)**

Hunt Area	Type	Season Dates		Quota	Limitations
		Opens	Closes		
128		Oct. 1	Oct. 15		General license; antlered mule deer or any white-tailed deer
	1	Nov. 1	Nov. 20	50	Limited quota licenses; any deer
	3	Nov. 1	Nov. 20	50	Limited quota licenses; any white-tailed deer
	6	Nov. 1	Nov. 20	25	Limited quota licenses; doe or fawn
	7	Nov. 1	Nov. 20	100	Limited quota licenses; doe or fawn valid in Area 128, excluding the Wiggins Fork River, East Fork River and Torrey Creek drainages.
148		Sep. 15	Oct. 25		General license; antlered deer
Archery					
128		Sep. 1	Sep. 30		General license; any deer. Limited quota; refer to license type.
148		Sep. 1	Sep. 14		General license; any deer

Hunt Area	Type	Quota change from 2012
128	6	-25
Total	6	-25

Management Evaluation

Current Management Objective: 10,000

Management Strategy: Recreational

2012 Postseason Population Estimate: ~6,500

2013 Proposed Postseason Population Estimate: ~6,300

Management Issues

The Dubois mule deer herd has an objective of 10,000 and a recreational management strategy. The objective has been in place since 1994.

Deer in this herd unit winter in hunt area 128. It is known many of the deer migrate out of the herd unit in late spring and do not return until early winter. Migration routes and the extent of summer range are unknown. Deer that do remain in the herd unit generally spend summers at high elevation sites. Much of the winter range utilized by deer overlaps elk and bighorn sheep winter range and remains relatively untouched by development.

Habitat/Weather

The past year was characterized by extreme drought throughout the herd unit. Vegetation transects monitored to determine the amount of forage available on elk winter range revealed production was approximately 50% of the previous year. This is likely a generous estimate since it was difficult to differentiate abundant residual forage in the samples. Although no vegetation data is collected at high elevation summer range, observations suggest vegetation growth was low on summer range as well. Given the low forage production, deer entered the winter in poor body condition. With average winter conditions, overwinter deer mortality may be higher than normal due to the poor condition of animals entering winter.

Field/Harvest Data/Population

Despite poor feed conditions, the fawn/doe ratio in 2012 was fairly high for this herd unit at 70/100. This was higher than any of the previous 5 years. The buck/doe ratio in the herd has been remarkably stable for many years. In 2012 the buck/doe ratio was 25/100. This was slightly lower than the previous 2 years but well within the range of variability in the herd. The population is suspected to have declined steadily over the past several years. The 2012 population estimate is approximately 6,500 deer.

Hunter success during the general, October season tends to be quite low. The low success is related to the fact many deer are not in the herd unit during that period. Deer typically migrate into the herd unit in late October and are present for the limited quota season in November. Due to the extensive immigration, success rates for November license holders are usually quite high. Although the success rate during the October, general season is never particularly high, it has been unusually low over the past 3 years at 22%, 16%, and 24% in 2010, 2011, and 2012 respectively. In conjunction with the low success rates, the days/animal statistics were unusually high over the past 3 years. Both these factors indicate a population decline over the past 3 years. Public comments and personnel observations corroborate the decline. Although the buck/doe ratio has been stable for a number of years, public perception is that buck quality has declined in conjunction with the overall population decline.

A new spreadsheet model was developed for the population in 2012. The model did not exhibit any erratic behavior with the addition of data in 2013. For 2012, the TSJ, CA version of the model was selected to track the population. This model simulates a significant population decline over the past 5 years. The modeled decline is supported by the harvest statistics mentioned above as well as public perception. The model appears to offer a fair approximation of the population given parameters selected by the model seem reasonable and it tracks suspected population trends closely.

Management Summary

The 2013 hunting season is designed to maintain recreational opportunity at the same level as the 2012 season. Hunting seasons have been fairly consistent over the past several years so it is suspected the recent decline in deer numbers is related to environmental conditions as opposed to harvest pressure. Harvest pressure was decreased in 2012 by reducing the general season length as well as decreasing the number of Type 1 licenses by 50%. Further reductions in opportunity are unwarranted until the impacts of reduced harvest in 2012 can be assessed. Recreational opportunity will be increased a bit in 2013 by allowing hunters to harvest any white-tailed deer during the general season. Other than that change, the 2013 hunting season will remain essentially unchanged. A small reduction in Type 6 licenses will occur to further alleviate pressure on doe mule deer.

INPUT

Species:

Mule Deer

Biologist:

Greg Anderson

Herd Unit & No.:

Dubois Mule Deer

Model date:

04/24/13

☐ Clear form

MODELS SUMMARY				Relative AICc	Check best model to create report	Notes
CJ,CA	Constant Juvenile & Adult Survival	Fit	99	108	<input type="checkbox"/> CJ,CA Model	
SCJ,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	99	108	108	<input type="checkbox"/> SCJ,SCA Mod	
TSJ,CA	Time-Specific Juvenile & Constant Adult Survival	19	137	137	<input checked="" type="checkbox"/> TSJ,CA Model	

Population Estimates from Top Model									
Year	Posthunt Population Est.		Trend Count		Predicted Prehunt Population		Predicted Posthunt Population		Objective
	Field Est	Field SE	Juveniles	Total	Juveniles	Total	Juveniles	Total	
1993			2061	1236	1975	6967	734	5731	10000
1994			2264	1517	2251	7255	636	6282	10000
1995			2324	1415	2320	7514	1064	7094	10000
1996			2654	1462	2648	7841	790	7087	10000
1997			2292	1205	2285	7149	878	6716	10000
1998			2443	1208	2438	7148	842	6749	10000
1999			2235	1298	2235	7077	820	6528	10000
2000			2298	1613	2295	7794	936	7030	10000
2001			1952	1380	1950	7161	728	6420	10000
2002			1698	1193	1693	6662	747	6109	10000
2003			1893	1066	1882	6524	661	6004	10000
2004			2064	1412	2056	7284	845	6635	10000
2005			2256	1648	2254	8024	947	7261	10000
2006			2691	1888	2687	8731	984	7954	10000
2007			2407	1380	2392	7987	760	7186	10000
2008			2333	1643	2311	8419	1071	7636	10000
2009			2296	1462	2283	7943	909	7215	10000
2010			2022	1234	2007	7155	927	6639	10000
2011			2231	1195	2221	6996	964	6602	10000
2012			2290	1269	2284	6925	947	6489	10000
2013			1913	1406	1907	6701	1103	6305	10000
2014									10000
2015									10000
2016									10000
2017									10000
2018									10000
2019									10000
2020									10000
2021									10000
2022									10000
2023									10000
2024									10000
2025									10000

Survival and Initial Population Estimates

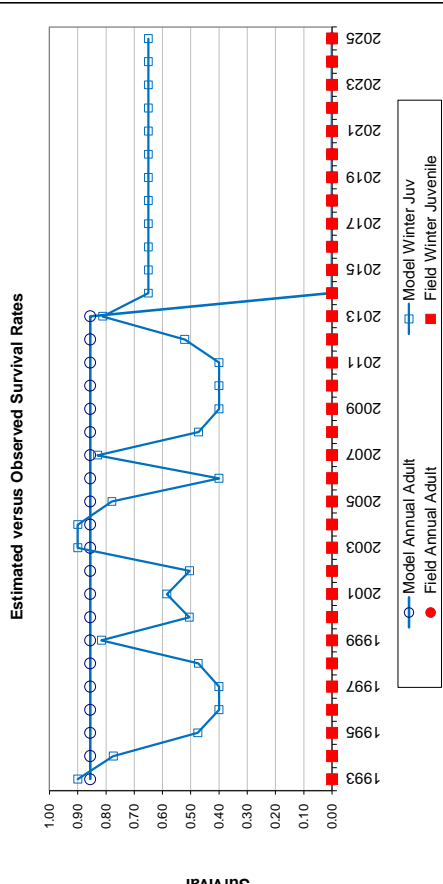
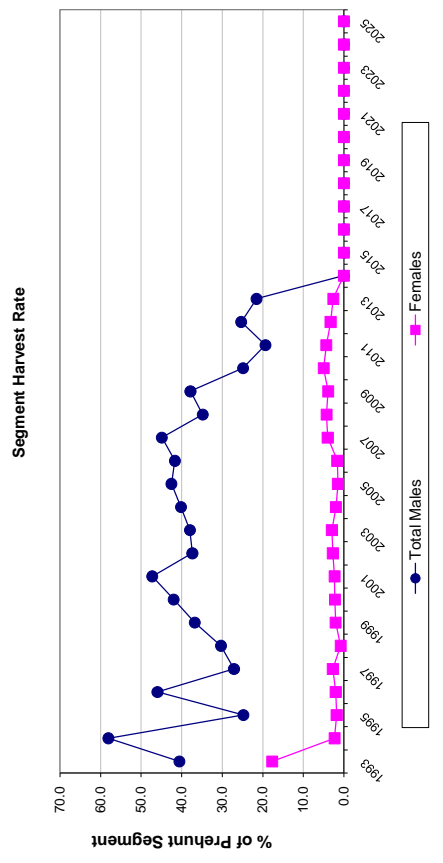
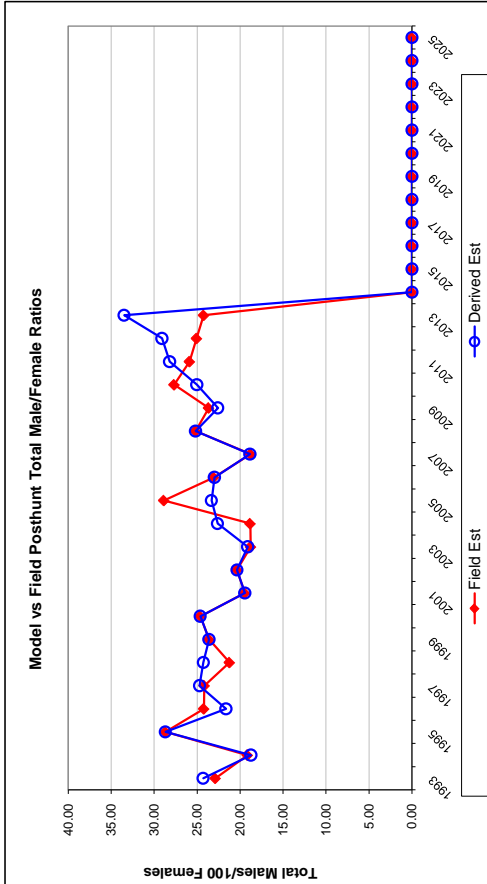
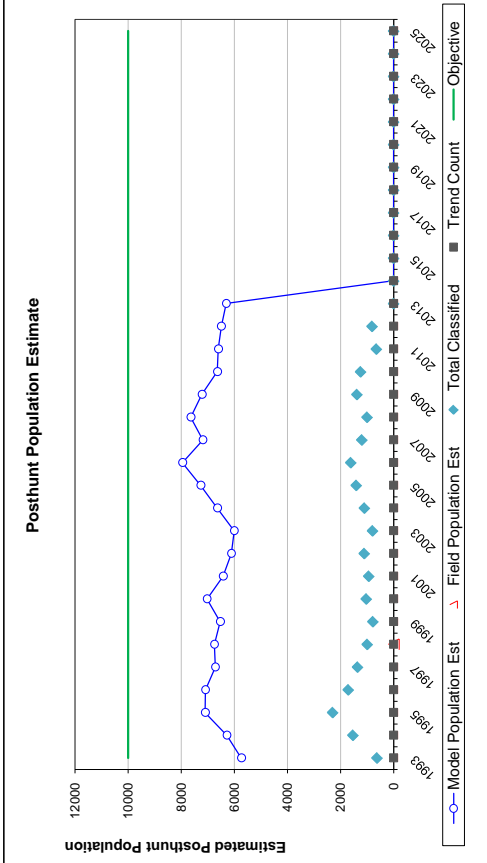
Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1993	0.90		0.86	
1994	0.77		0.86	
1995	0.48		0.86	
1996	0.40		0.86	
1997	0.40		0.86	
1998	0.47		0.86	
1999	0.82		0.86	
2000	0.50		0.86	
2001	0.58		0.86	
2002	0.50		0.86	
2003	0.90		0.86	
2004	0.90		0.86	
2005	0.78		0.86	
2006	0.40		0.86	
2007	0.83		0.86	
2008	0.47		0.86	
2009	0.40		0.86	
2010	0.40		0.86	
2011	0.40		0.86	
2012	0.52		0.86	
2013	0.81		0.86	
2014	0.65			
2015	0.65			
2016	0.65			
2017	0.65			
2018	0.65			
2019	0.65			
2020	0.65			
2021	0.65			
2022	0.65			
2023	0.65			
2024	0.65			
2025	0.65			

Parameters:		Optim cells
Adult Survival =		0.855
Initial Total Male Pop/10,000 =		0.073
Initial Female Pop/10,000 =		0.302

MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%

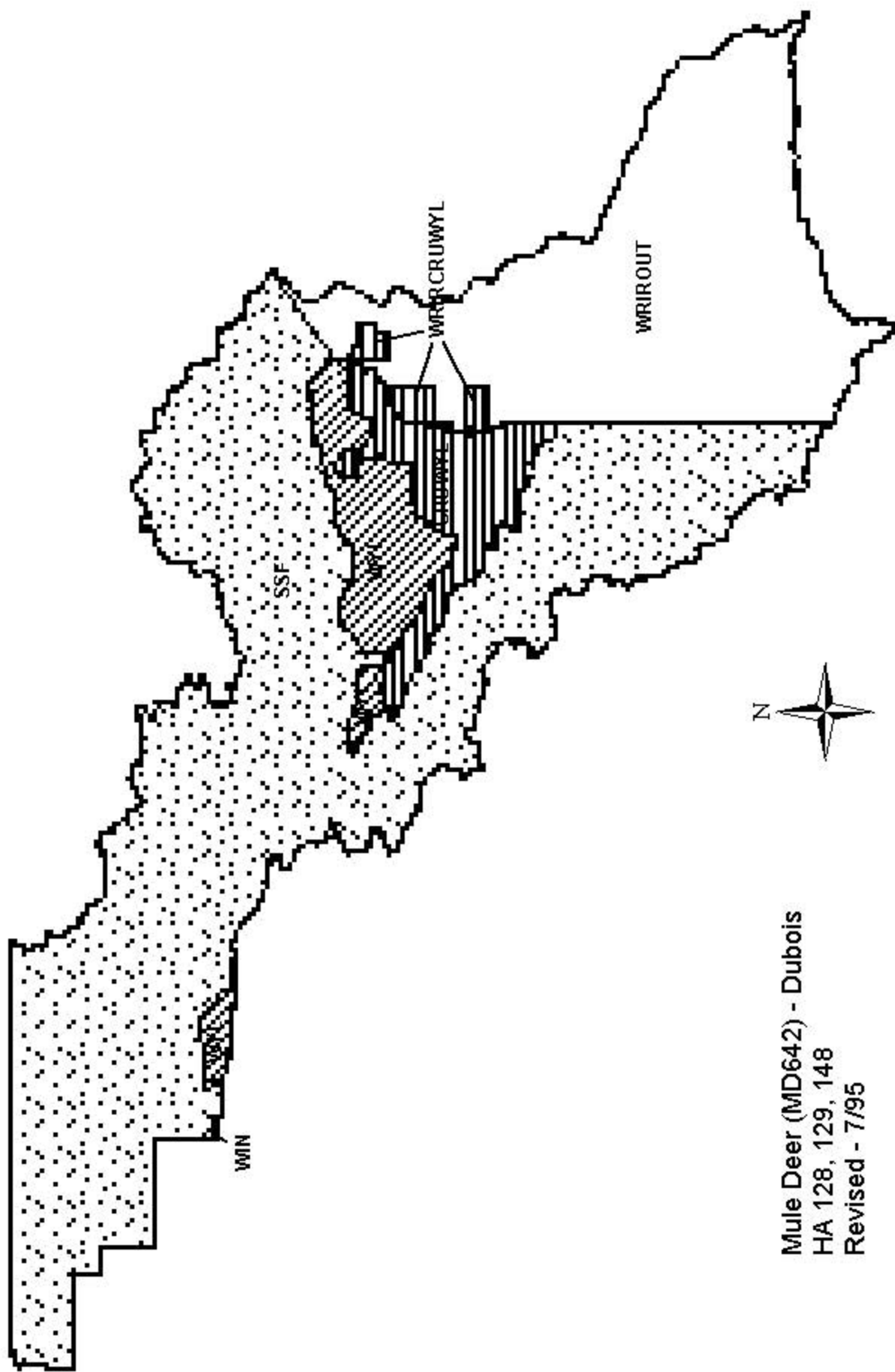
Year	Classification Counts						Harvest					
	Juvenile/Female Ratio			Total Male/Female Ratio			Total Male/Female Ratio			Segment Harvest Rate (% of		
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/o bull adj	Field SE	Juv	Males	Females	Total Harvest	Total Males	Females
1993		65.36	5.71	24.30	22.89	2.91	78	456	589	1123	40.6	17.7
1994		66.30	3.66	18.73	19.15	1.66	12	801	72	885	58.1	2.3
1995		62.55	2.91	28.69	28.69	1.75	3	319	60	382	24.8	1.7
1996		72.55	3.80	21.64	24.22	1.86	6	611	68	685	46.0	2.0
1997		64.31	3.53	24.72	24.17	2.04	7	297	90	394	27.1	2.7
1998		70.27	4.81	24.28	21.24	2.23	5	333	25	363	30.3	0.8
1999		64.34	5.05	23.61	23.61	2.65	0	434	65	499	36.8	2.0
2000		60.43	4.18	24.64	24.64	2.35	2	616	77	695	42.0	2.2
2001		52.11	3.81	19.45	19.45	2.06	2	593	79	674	47.3	2.3
2002		46.15	3.19	20.36	20.36	1.92	4	405	93	502	37.4	2.7
2003		54.37	4.28	19.10	18.78	2.21	10	368	95	473	38.0	2.9
2004		55.06	3.68	22.63	18.83	1.88	7	516	67	590	40.2	1.9
2005		55.51	3.37	23.33	28.87	2.21	2	637	54	693	42.5	1.4
2006		62.75	3.43	22.99	23.07	1.81	4	640	63	707	41.7	1.6
2007		59.31	3.75	18.85	18.78	1.82	13	563	152	728	44.9	4.0
2008		54.32	3.88	25.18	25.18	2.38	20	520	172	712	34.8	4.3
2009		56.73	3.41	22.59	23.66	1.96	12	503	147	662	37.8	3.9
2010		54.17	3.50	25.03	27.67	2.27	14	279	176	469	24.9	5.0
2011		65.00	5.62	28.20	25.88	3.10	9	210	140	359	19.3	4.3
2012		70.12	5.36	29.08	25.06	2.75	5	292	100	397	25.3	3.3
2013		57.91	4.03	33.49	24.23	2.31	5	275	80	360	21.5	2.6
2014												
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												

FIGURES



Comments:

END



Mule Deer (MD642) - Dubois
HA 128, 129, 148
Revised - 7/95

2012 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2012 - 5/31/2013

HERD: MD643 - PROJECT

HUNT AREAS: 157, 170-171

PREPARED BY: GREG
ANDERSON

	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	0	N/A	N/A
Harvest:	613	1,073	850
Hunters:	717	1,156	950
Hunter Success:	85%	93%	89%
Active Licenses:	813	1,338	1,100
Active License Percent:	75%	80%	77%
Recreation Days:	3,000	5,153	3,700
Days Per Animal:	4.9	4.8	4.4
Males per 100 Females	0	0	
Juveniles per 100 Females	0	0	

Population Objective:	500
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	0
Model Date:	None

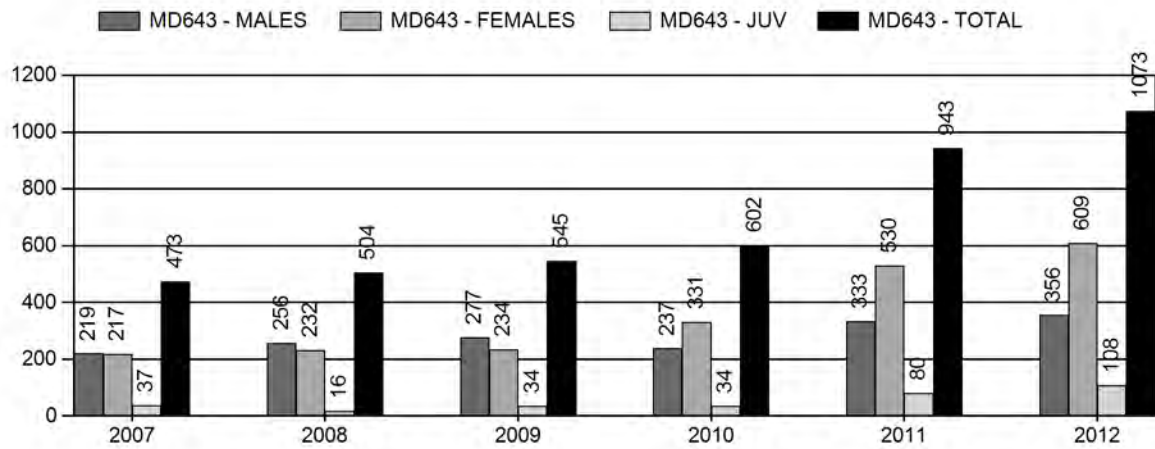
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0%	0%
Males \geq 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%
Total:	0%	0%
Proposed change in post-season population:	0%	0%

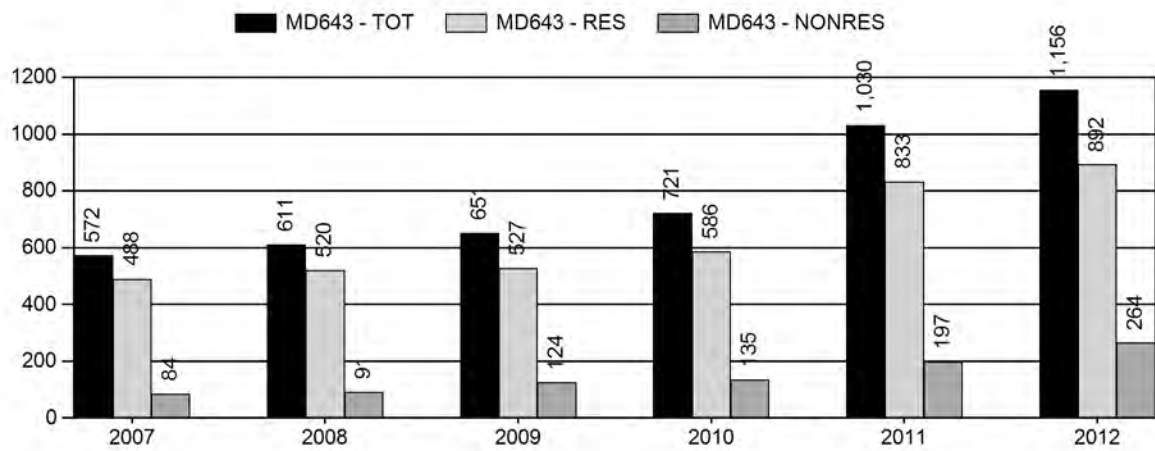
Population Size - Postseason



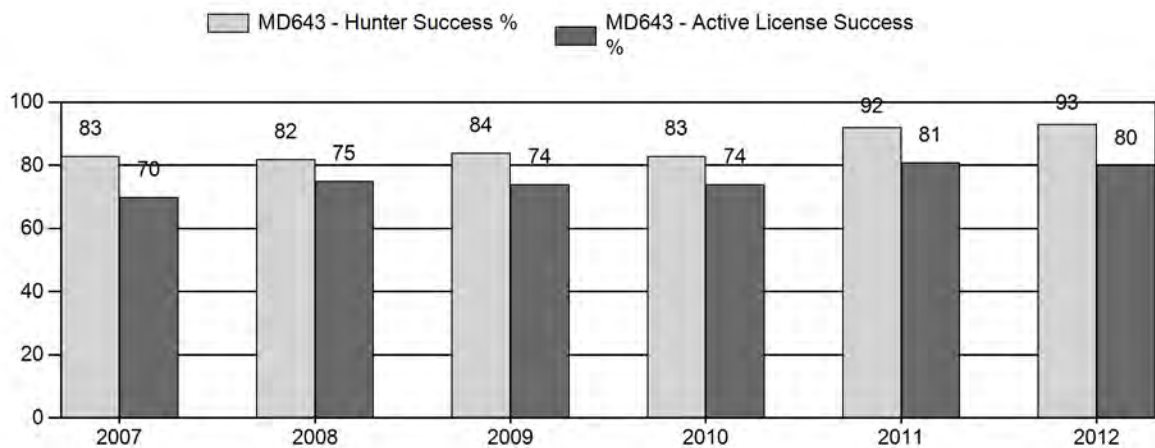
Harvest



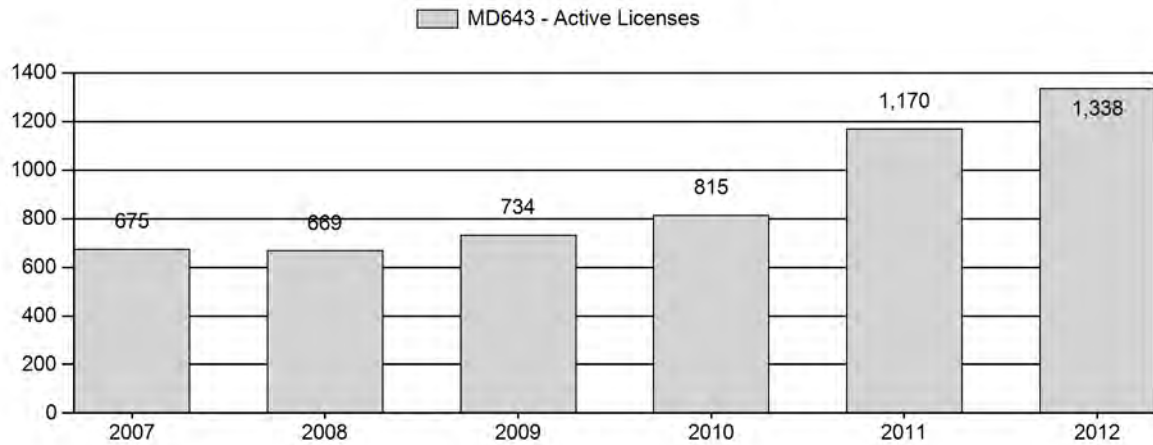
Number of Hunters



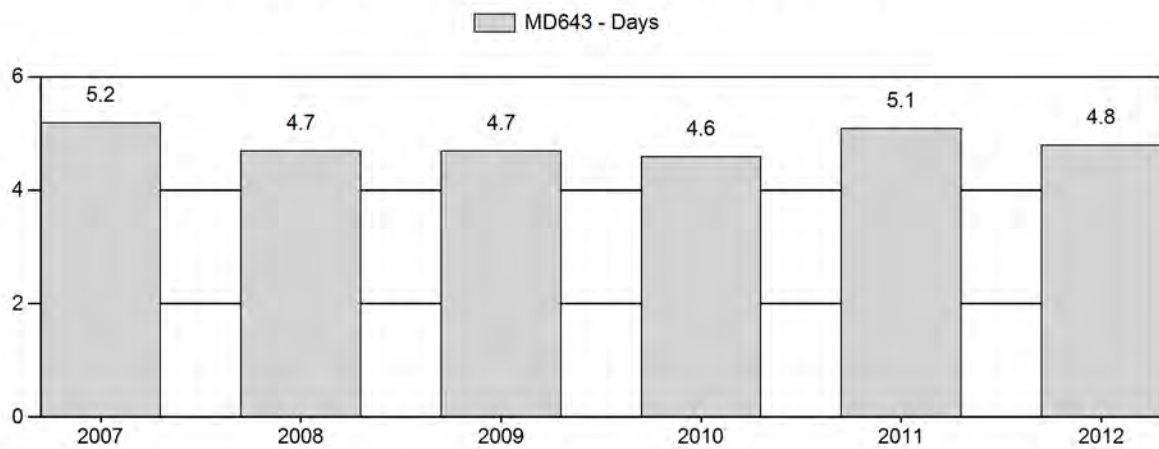
Harvest Success



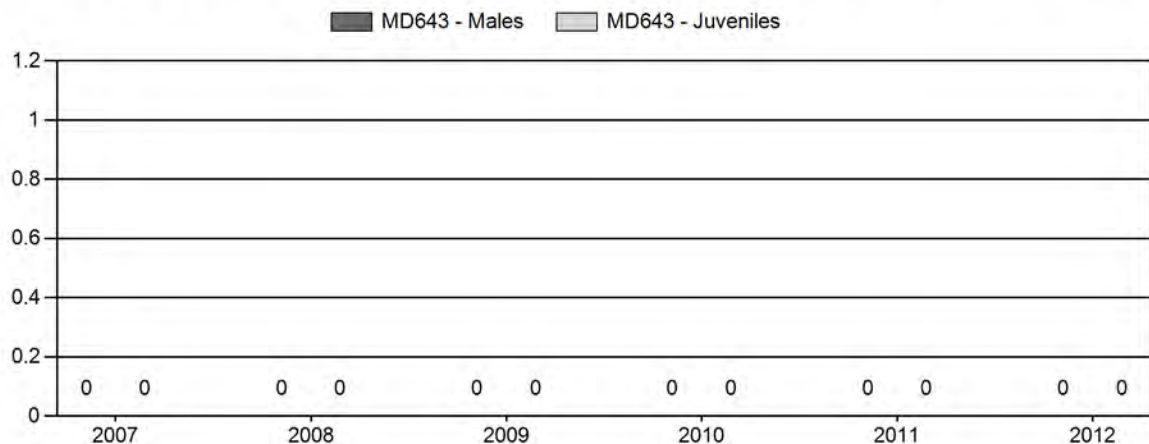
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



**2013 HUNTING SEASONS
PROJECT MULE DEER (MD 643)**

Hunt Area	Type	Season Dates		Quota	Limitations
		Opens	Closes		
157, 170	1	Oct. 1	Oct. 31	300	Limited quota licenses; any deer
	3	Nov. 1	Nov. 30	200	Limited quota licenses; any white-tailed deer
	6	Oct. 1	Nov. 10	400	Limited quota licenses; doe or fawn
	8	Oct. 1	Oct. 31	325	Limited quota licenses; doe or fawn white-tailed deer
		Nov. 1	Nov. 30		Unused Area 157, 170 Type 8 licenses valid on private land
171	3	Oct. 1	Oct. 31	75	General license; any deer
		Nov. 1	Nov. 30		Limited quota licenses; any white-tailed deer
	6	Oct. 1	Nov. 30	250	Limited quota licenses; doe or fawn
Archery					
157, 170		Sep. 1	Sep. 30		Refer to section 3 of this chapter
171		Sep. 1	Sep. 30		General license; any deer. Limited quota; refer to section 3 of this chapter

Hunt Area	Type	Quota change from 2012
157, 170	1	-150
	6	-450
171	3	+25
	6	+50
Total	1	-150
	3	+25
	6	-400

Management Evaluation

Current Management Objective: 500

Management Strategy: Recreational

2012 Postseason Population Estimate: unknown

2013 Proposed Postseason Population Estimate: unknown

Management Issues

The Project mule deer herd has an objective of 500 and is managed for recreational opportunity. The current objective has been in place since 1994. Despite having a numerical objective there has never been an adequate population estimate for this herd. Nearly the entire herd unit is bounded by or interspersed with the Wind River Reservation (WRR). Due to the amount of deer interchange with the WRR, the Department has never been able to collect sufficient demographic data on the herd. The Lander Region is currently in the process of developing an appropriate alternative objective for this herd.

Habitat/Weather

This population inhabits a heavily agricultural area in central Wyoming as well as lands interspersed throughout the WRR. Land ownership patterns make it difficult and cost prohibitive to collect demographic data in the herd. Over the past couple of decades, residential and industrial development have impacted habitat in portions of the herd unit. Despite the development, the deer population has thrived due to abundant feed resources associated with agriculture throughout the area. A harsh winter in 2010 and extreme drought in 2012 had less impact in this herd than on surrounding populations, again due to abundant feed associated with irrigated fields and pasture.

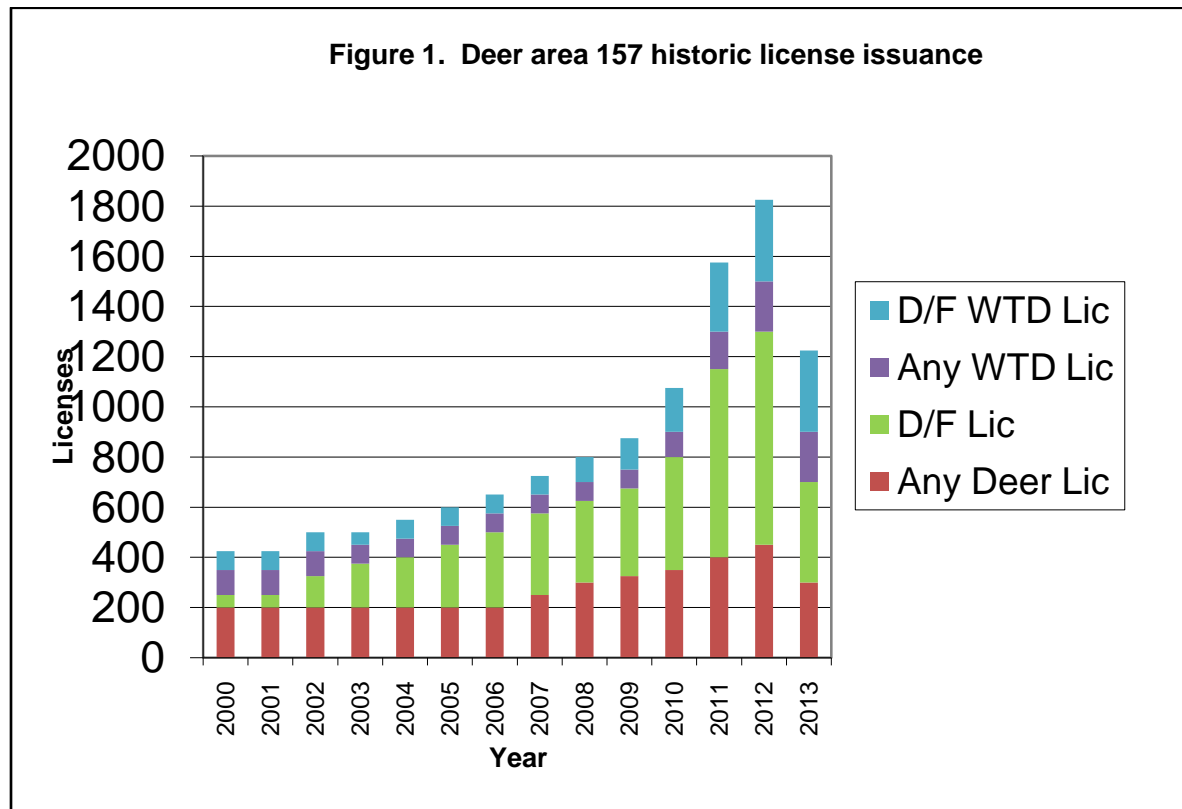
Field/Harvest Data/Population

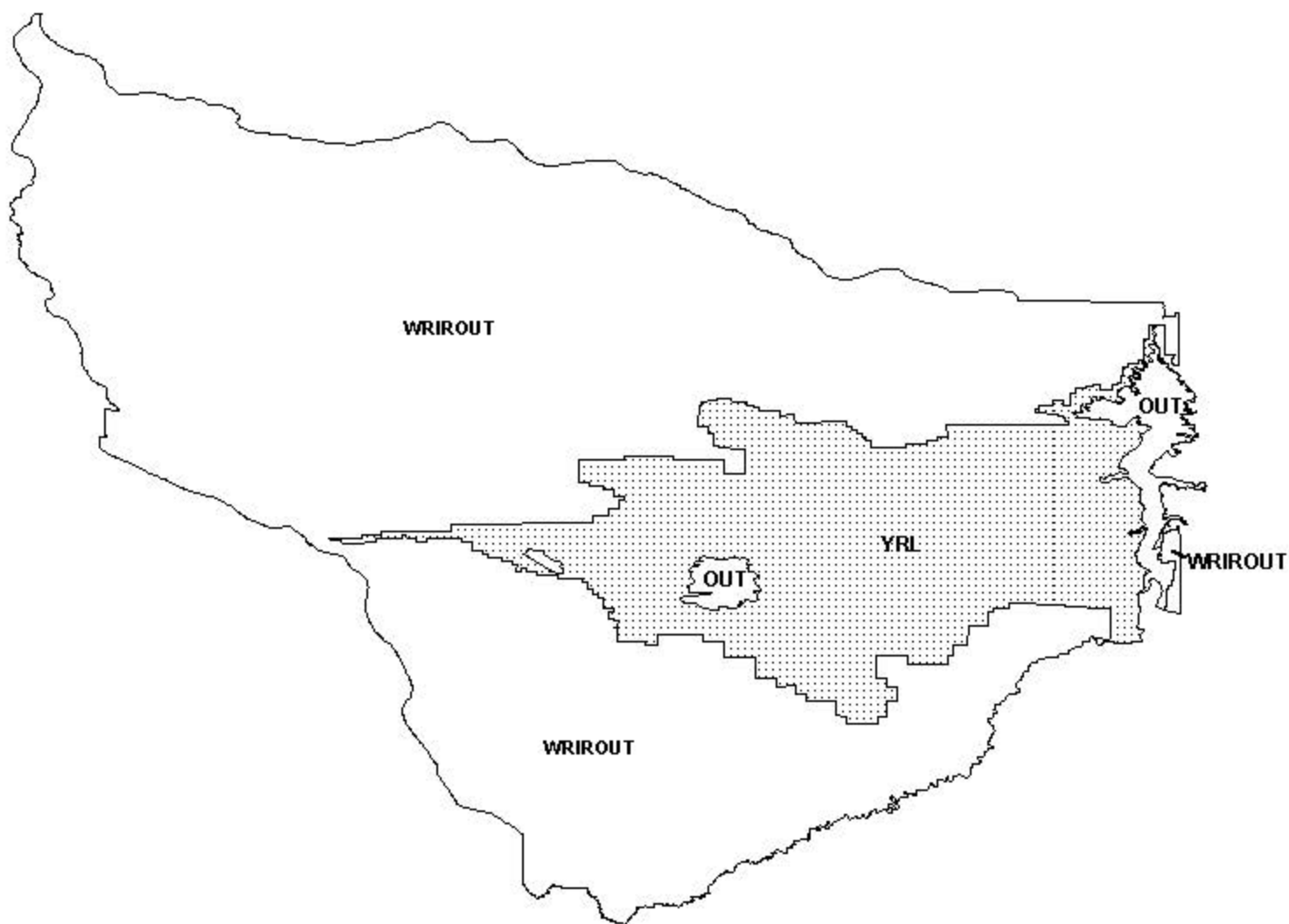
Classification data has never been collected in this herd unit due to access issues throughout much of the herd unit. The lack of classification data combined with extensive interchange with the WRR precludes the construction of a population model. Despite the lack of a population model, for much of the past decade, landowners, hunters, and Department personnel felt the deer population was increasing in this herd unit. Damage complaints from landowners rose steadily over the past 10 years and reached a peak in 2011. Over that time period the Department steadily increased harvest pressure on deer to address the perceived population increase. Figure 1 illustrates the extent to which harvest pressure increased in the herd unit. Total deer licenses peaked in 2012 at more than 3 times the number issued a decade before. Despite the significant increase in license numbers, hunter success continued to be extremely high, again indicating the population had increased. License numbers saw substantial increases in 2011 and 2012 to address damage concerns. Following the 2012 season, damage complaints moderated and Department personnel began to receive comments from some landowners and hunters remarking on the decline in deer numbers. Most of the harvest in the herd unit comes from hunt area 157. Over the past decade, success on Type1 licenses in hunt area 157 has fluctuated between 75% and 90% with no obvious trends. Type 1 license success for hunt area 157 in 2012 was 84%.

Management Summary

Perceptions of hunters, landowners, and Department personnel are that the past two years' liberal seasons effectively reduced the deer population in the herd unit. The 2013 season is designed to

decrease harvest levels from the past 2 years but still maintain significant harvest pressure. The reduction in license numbers for 2013 should result in mule deer harvest similar to 2010 which is still a liberal season by historical standards in the herd unit (Fig. 1).





Mule Deer (MD643) - Project
HA 157, 170, 171
Revised - 4/95



2012 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2012 - 5/31/2013

HERD: MD644 - SOUTH WIND RIVER

HUNT AREAS: 92, 94, 160

PREPARED BY: STAN HARTER

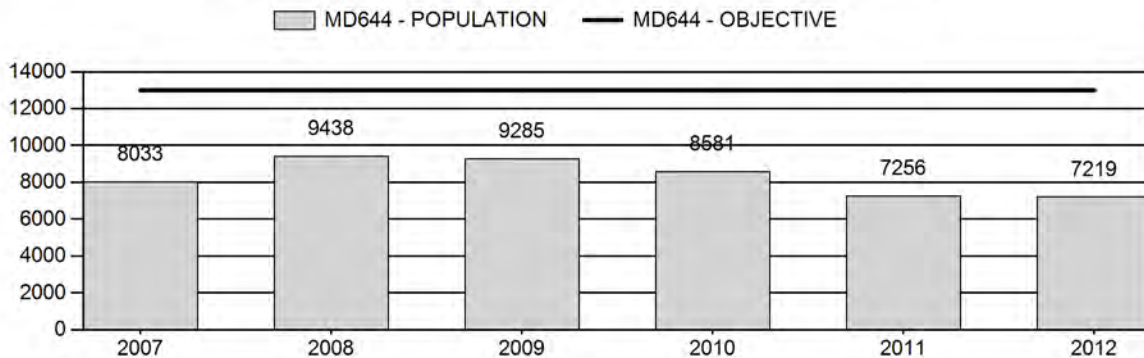
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	8,519	7,219	6,995
Harvest:	850	413	420
Hunters:	1,755	1,251	1,200
Hunter Success:	48%	33%	35%
Active Licenses:	1,870	1,272	1,200
Active License Percent:	45%	32%	35%
Recreation Days:	7,083	5,647	5,500
Days Per Animal:	8.3	13.7	13.1
Males per 100 Females	26	22	
Juveniles per 100 Females	73	80	

Population Objective:	13,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-44.5%
Number of years population has been + or - objective in recent trend:	5
Model Date:	4/3/2013

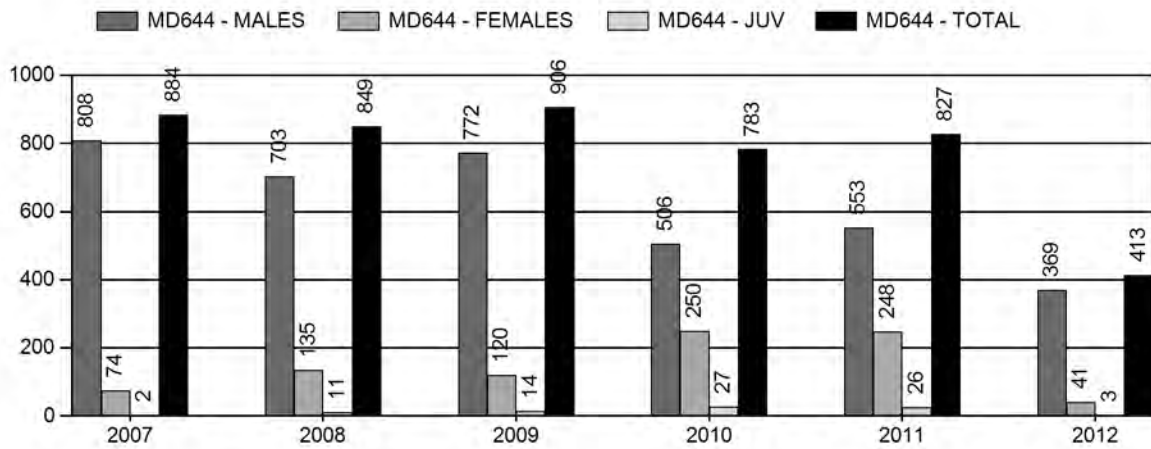
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	1.3%	0.6%
Males \geq 1 year old:	31.8%	32.1%
Juveniles (< 1 year old):	0.0%	0.0%
Total:	5.7%	6.0%
Proposed change in post-season population:	-0.5%	-3.1%

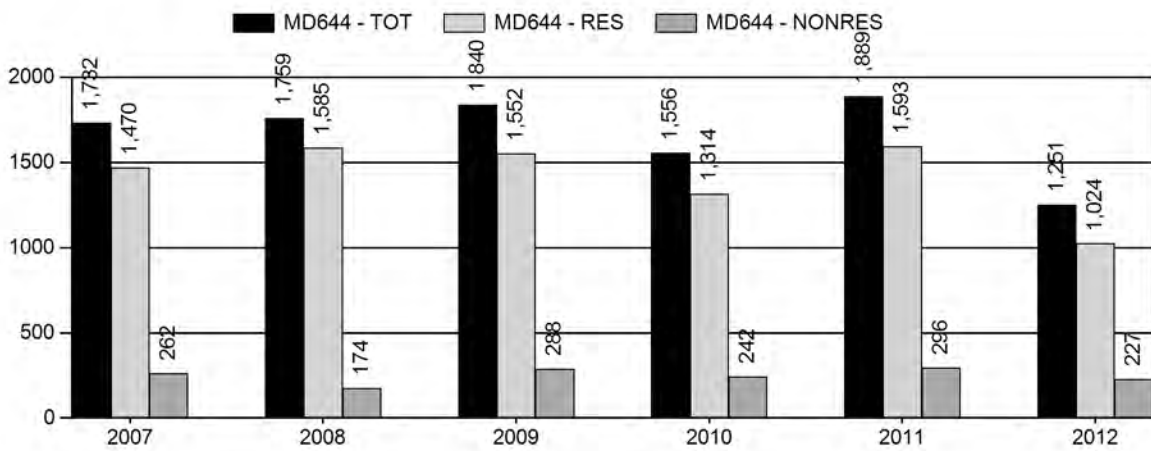
Population Size - Postseason



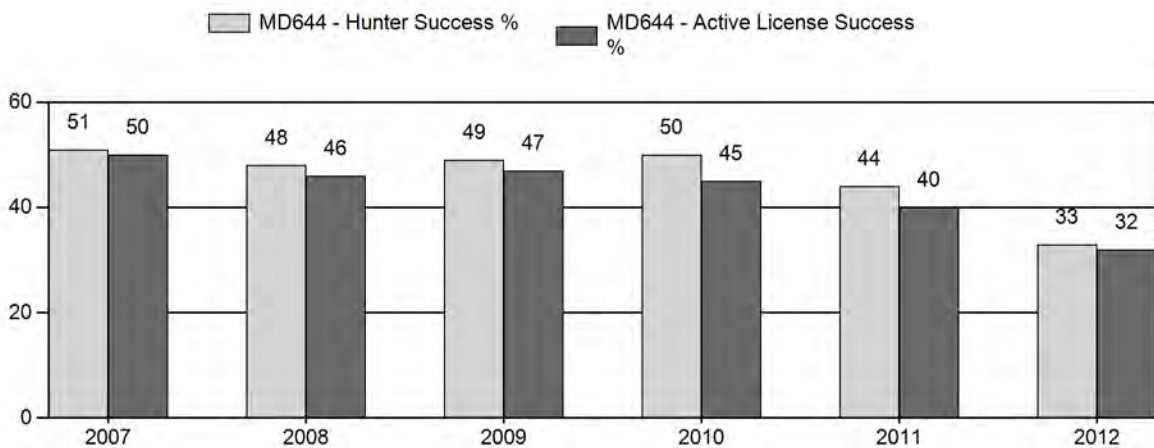
Harvest



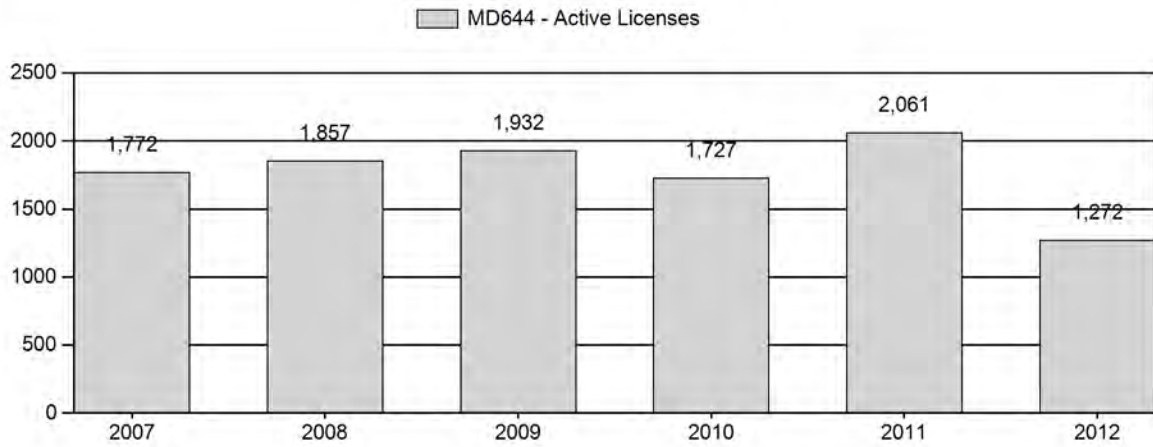
Number of Hunters



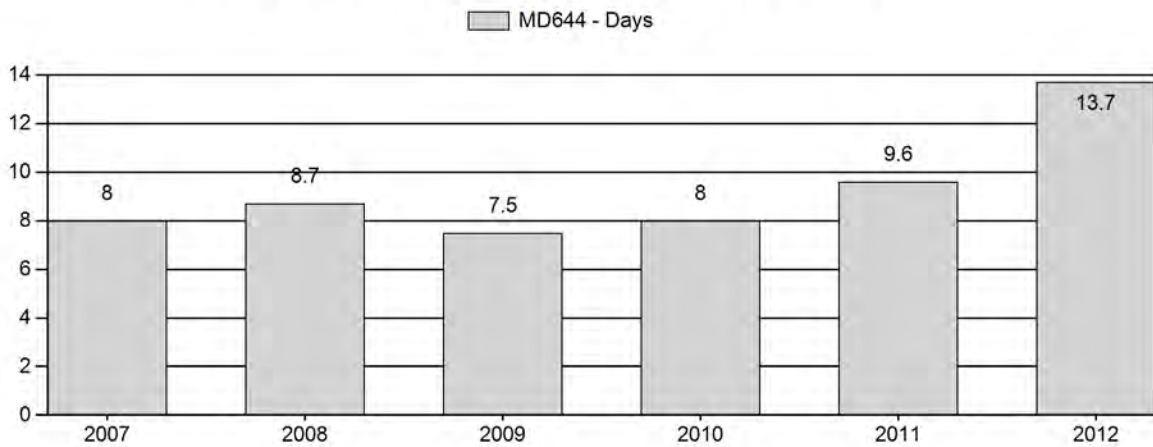
Harvest Success



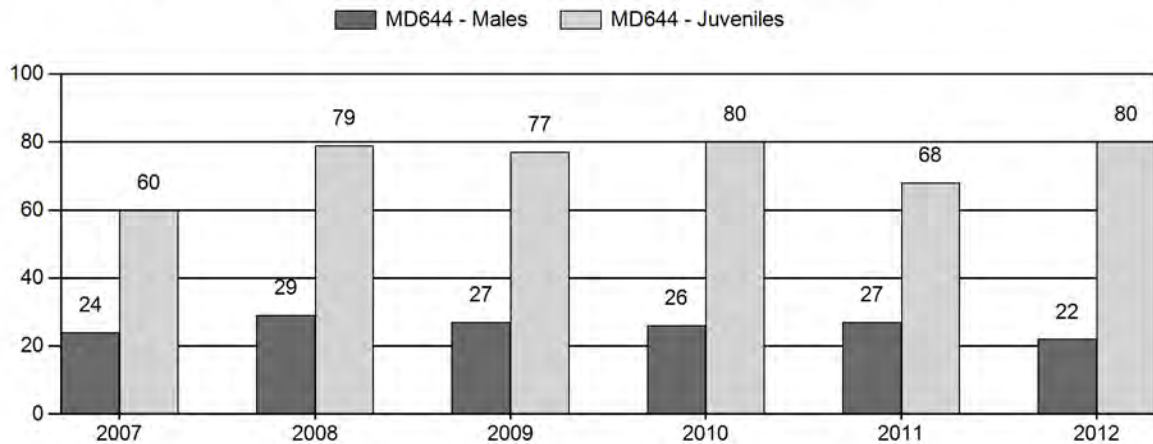
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Mule Deer Herd MD644 - SOUTH WIND RIVER

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylg	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	8,033	233	252	485	13%	1,998	54%	1,204	33%	3,687	1,051	12	13	24	± 1	60	± 2	48
2008	9,438	212	259	471	14%	1,650	48%	1,300	38%	3,421	1,654	13	16	29	± 2	79	± 3	61
2009	9,285	271	276	547	13%	2,007	49%	1,548	38%	4,102	1,587	14	14	27	± 1	77	± 2	61
2010	8,581	198	191	389	12%	1,512	49%	1,214	39%	3,115	1,695	13	13	26	± 1	80	± 3	64
2011	7,256	154	199	353	14%	1,319	51%	892	35%	2,564	1,277	12	15	27	± 2	68	± 3	53
2012	7,219	102	149	251	11%	1,129	49%	908	40%	2,288	1,543	9	13	22	± 2	80	± 4	66

2013 HUNTING SEASONS
South Wind River Mule Deer Herd Unit (MD 644)

HUNT AREA	TYPE	Season Dates OPENS CLOSES		Limited Quota	LIMITATIONS
92		Oct. 15	Oct. 22		General license; antlered mule deer three (3) points or more on either antler or any white-tailed deer
92, 94, 160	3	Nov. 1	Nov. 20	50	Limited quota licenses; any white-tailed deer
92, 94, 160	8	Nov. 1	Nov. 20	100	Limited quota licenses; doe or fawn white-tailed deer
94		Oct. 15	Oct. 22		General license; antlered mule deer three (3) points or more on either antler or any white-tailed deer
160		Oct. 15	Oct. 22		General license; antlered mule deer three (3) points or more on either antler or any white-tailed deer
	6	Oct. 1	Oct. 22	25	Limited quota licenses; doe or fawn valid on private land
Archery 92, 94, 160		Sept. 1	Sept. 30		General License; any deer Limited Quota; Refer to Section 3 of this Chapter

Region E Non-Resident Quota: 600

Hunt Area	Type	Change from 2012
92, 94, 96	6	-25
160	6	-5
92, 94, 160	8	+50
Total MD644	6	-30
	8	+50
		+20
Region E		-200

MANAGEMENT EVALUATION

Current Management Objective: 13,000

Management Strategy: Recreation (20-30 bucks/100 does)

2012 Post-season Population Estimate: ~7,200

2013 Post-season Population Estimate: ~7,000

Herd Unit Issues

This population declined dramatically in the early 1990s following a series of drought years and a harsher than normal winter in 1992. Mule deer numbers fluctuated greatly throughout the 1990s and 2000s, with peaks in 1998 and 2008-09. However, mule deer populations have declined noticeably in the South Wind River Mule Deer Herd Unit and elsewhere in their range in the past 3 years. The 2012 post-season population estimate for South Wind River Mule Deer is about 7,200 animals, about 44% below objective.

Weather/Habitat

Weather conditions have been variable for several years, with winter mortality apparently resulting from crusted snow conditions in winter 2009-10, followed by cold, wet, and snowy conditions occurring well into June 2010. Winter 2010-11 seemed to duplicate these conditions with crusted snow, followed by cold, wet spring weather impacting newborn fawns. Drought conditions have been extreme to exceptional for the past year, beginning with minimal snowfall in winter 2011-12 and continuing with almost no precipitation during spring and summer 2012. This resulted in an almost complete lack of herbaceous or browse forage production across the herd unit. Thus, poor body condition was observed in many mule deer by late-summer, especially lactating females attempting to raise fawns into fall. Many does were observed in late-August and September with backbones and ribs showing. In spite of fairly mild winter conditions in 2012-13, early winter mortality was probably above average due to the poor body condition of mule deer entering winter.

By early April, drought was expected to worsen through 2013. However, a series of several late winter/early spring snow storms produced over 50" of snow through early May (the equivalent of nearly 4" precipitation) in Lander, with more snow reported in Sinks Canyon (up to 78") and other locations along the east slope of the Wind River Range. These storms have proven extremely helpful in lessening the effects of drought, yet they only helped change the drought status from Extreme to Severe. Unless more precipitation is received in May and June, little habitat improvement (especially shrubs, aspen, and riparian) will be achieved. Additionally, the heaviest precipitation was received in the Lander Foothills, with areas such as South Pass and the Antelope Hills receiving very little new snow in April.

Field Data

Sufficient flight budget and good flying conditions allowed us to survey winter ranges thoroughly using a Bell 206 Jet Ranger helicopter, but deer were difficult to see due to lack of snow cover and widely scattered distribution on winter ranges. This, in part, led to a reduction in the number of mule deer observed. The 2012 post-season observed total buck/doe ratio declined to 22M/100F. Three (3) point antler restrictions were implemented for the 2012 hunting season to reduce hunting pressure and buck harvest, which occurred. However, the decreased buck/doe ratio was unexpected and was likely the result of poor fawn production in 2011. Despite protecting yearling bucks with this harvest restriction, the yearling buck/doe ratio dropped 25% to 9YM/100F. The fawn/doe ratio increased to 80J/100F, possibly due to elevated mortality of adult females in the past year.

Harvest Data

Weather during the past 3 hunting seasons was very mild in the South Wind River Herd Unit. Warm temperatures and little snow created major shifts in mule deer distribution; many deer were at much higher elevations during the hunting season than in the past. Hunters reported fewer and lower "quality" bucks and fewer mule deer overall, but where doe and fawn groups were found, they felt there were good numbers of fawns. In response to public desire to reduce hunter densities and reduce buck harvest, we implemented three (3) point antler restrictions in 2012, which resulted in 28% fewer general license hunters and 33% fewer bucks being harvested than in 2011, and caused general license hunter success to drop to 31%. The "days per animal harvested" statistics for general licenses, as an indicator of hunter effort, increased to 14.8 days in 2012. Doe/fawn hunting in response to damage issues in Hunt Areas 92, 94, and 160 resulted in minimal harvest of 35 does and 3 fawns.

Population

A spreadsheet model was developed for this population in 2012, utilizing post-season classification and harvest data from 1994-2012. The TSJ, CA model was selected as the best fit model, with the lowest Relative AICc value and it also produced population estimates more closely aligned with trends observed in buck harvest, fawn recruitment, and buck/doe ratios and more closely aligns with the professional perceptions of field personnel. The post-hunt population estimates created by this model are lower (~20%) than those produced by POP-II, but with very similar trends. This spreadsheet model (TSJ, CA) is considered FAIR, and should be used for bio-year 2012 with a post-season estimate of about 7,200 mule deer.

Management Summary

Mule deer populations have declined noticeably in this herd unit and elsewhere in their range the past few years. We made significant changes to the hunting seasons for 2012 and 2013 in response to the decline. The following is a synopsis of those changes and the expected results. A series of public meetings were held in December 2011 and again in 2012, and many of these changes were requested, if not demanded, at those meetings. In this analysis, both the South Wind River and Sweetwater Mule Deer Herd Units are essentially treated as one larger unit, since general license hunting seasons and historic hunter use has been quite similar. We believe these trends need to continue, since differences in hunting seasons between these areas could result in benefits in one herd unit at the expense of the other. In order to achieve the desired results, current and future proposals will consider similar general license season structure in both herd units (unless sufficient evidence indicates differences are needed).

The 2013 seasons should result in considerable decreases in hunter numbers and mule deer harvest, due to:

1. Antler point restrictions for General Licenses in Hunt Areas 92, 94, and 160 (Antlered mule deer with three (3) points or more on either antler or any white-tailed deer). Youth General License holders will still be allowed to harvest ANY deer in these areas.
2. Major reductions in Doe/Fawn licenses (Type 6). Remaining Type 6 licenses are valid only on private land to address very localized damage issues.
3. Opening day (October 15) is a Tuesday, which is likely to delay hunting pressure until the weekend of Oct. 19 & 20 and will also likely reduce hunter numbers and harvest.

This is the second of a 2 year evaluation period as was presented to the public in the 2012 season setting process. We plan to re-evaluate this season structure following the 2013 season based on whether:

1. Population improves toward objective.
2. Hunter success improves to $\geq 50\%$ for general license hunters by 2013.

However, as a result of drought, which wasn't anticipated upon setting these criteria, the population has declined and even though the fawn/doe ratio increased to 80J/100F, we don't anticipate significant population growth if conditions don't improve. Also, as described above, the buck/doe ratio declined in spite of antler point restrictions, with yearling bucks declining 25% even though protected by the APR. With declining or stable population and buck ratio trends, reaching 50% general license success seems improbable.

With declining population trend and concern about drought and potential for increased winter mortality, we removed all Type 6 licenses from the 2013 application information. However, we propose to reinstate minimal numbers of doe/fawn licenses in Area 160 to focus hunters into specific hayfield

damage prone areas and to show our concern about population growth in during this period of poor habitat quality.

White-tailed deer hunts are again being offered with 50 Type 3 (Any white-tailed deer) and 100 Type 8 (Doe or fawn white-tailed deer) licenses valid in Hunt Areas 92, 94, and 160 collectively in November.

We estimate the 2013 season structure should result in a harvest of approximately 420 mule deer, including 400 bucks and 20 does. This should allow for a stable population of about 7,000 mule deer after the 2013 hunting season.

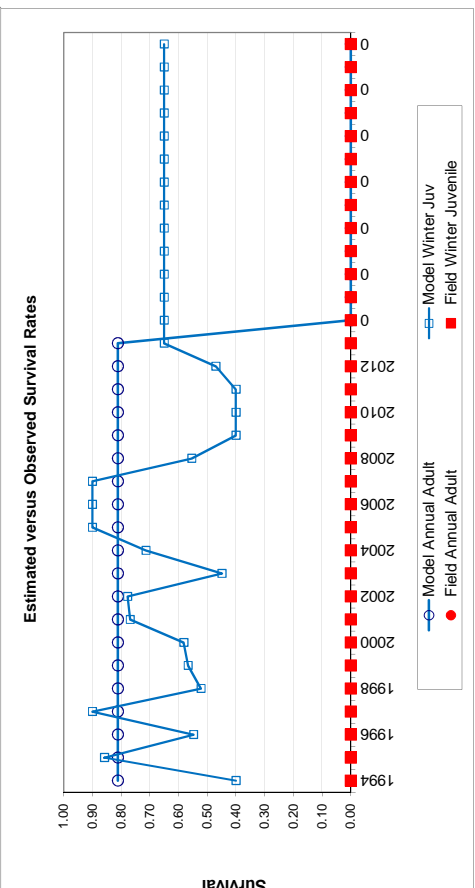
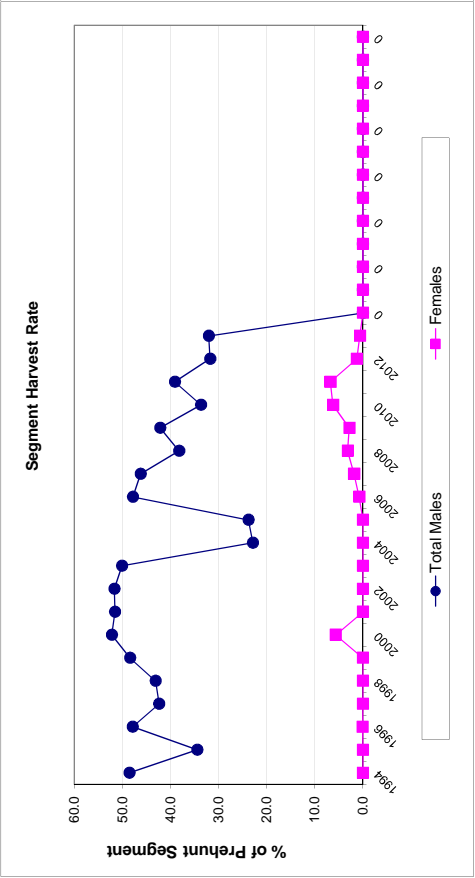
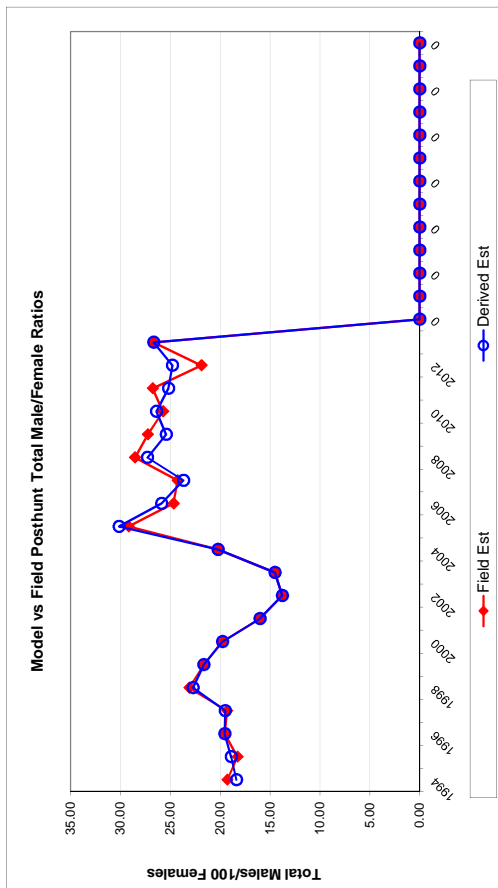
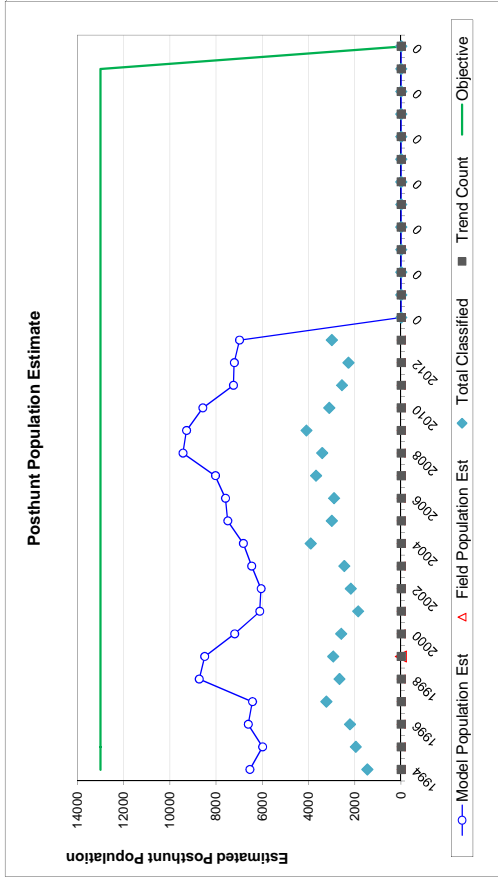
Survival and Initial Population Estimates

Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1994	0.40		0.81	
1995	0.86		0.81	
1996	0.55		0.81	
1997	0.90		0.81	
1998	0.52		0.81	
1999	0.57		0.81	
2000	0.58		0.81	
2001	0.77		0.81	
2002	0.78		0.81	
2003	0.45		0.81	
2004	0.71		0.81	
2005	0.90		0.81	
2006	0.90		0.81	
2007	0.90		0.81	
2008	0.55		0.81	
2009	0.40		0.81	
2010	0.40		0.81	
2011	0.40		0.81	
2012	0.47		0.81	
2013	0.65		0.81	
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			
0	0.65			

Parameters:		Optim cells
Adult Survival =		0.811
Initial Total Male Pop/10,000 =		0.068
Initial Female Pop/10,000 =		0.368

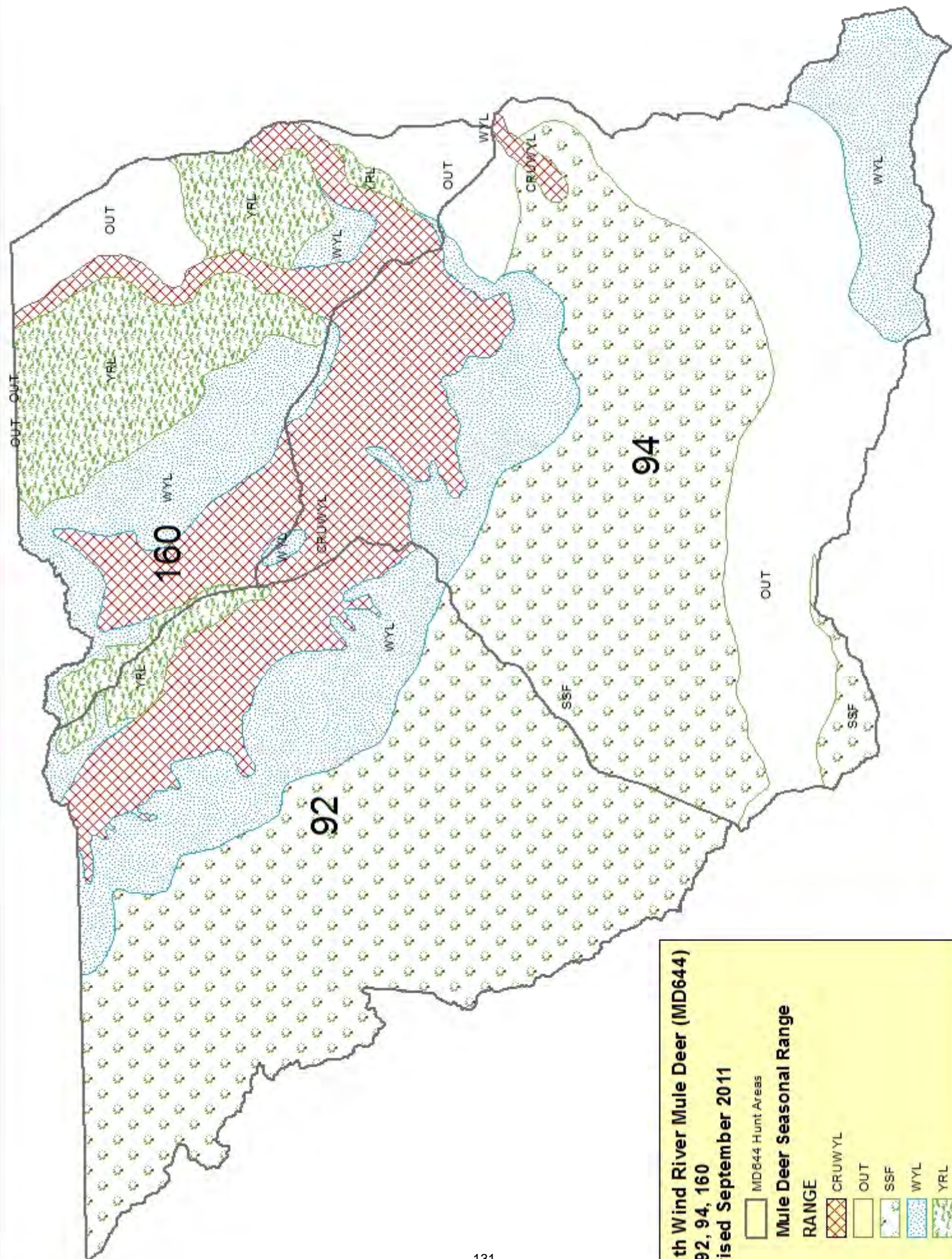
MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%

FIGURES



Comments:

END



South Wind River Mule Deer (MD644)
HA 92, 94, 160
Revised September 2011

MD644 Hunt Areas

Mule Deer Seasonal Range

RANGE

CRUWYL	OUT	SSF	WYL	YRL
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2012 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2012 - 5/31/2013

HERD: MD646 - SWEETWATER

HUNT AREAS: 96-97

PREPARED BY: STAN HARTER

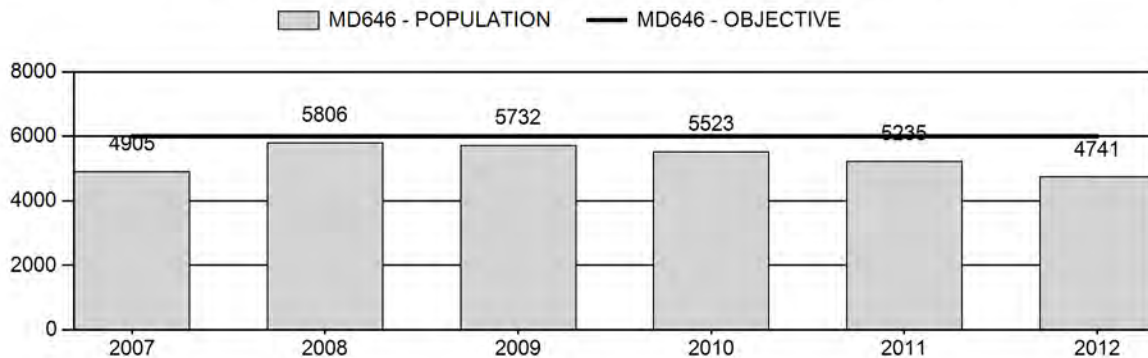
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	5,440	4,741	4,803
Harvest:	723	266	250
Hunters:	1,268	1,020	900
Hunter Success:	57%	26%	28%
Active Licenses:	1,357	1,033	900
Active License Percent:	53%	26%	28%
Recreation Days:	4,510	3,944	4,000
Days Per Animal:	6.2	14.8	16
Males per 100 Females	24	23	
Juveniles per 100 Females	79	65	

Population Objective:	6,000
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	-21.0%
Number of years population has been + or - objective in recent trend:	5
Model Date:	4/3/2013

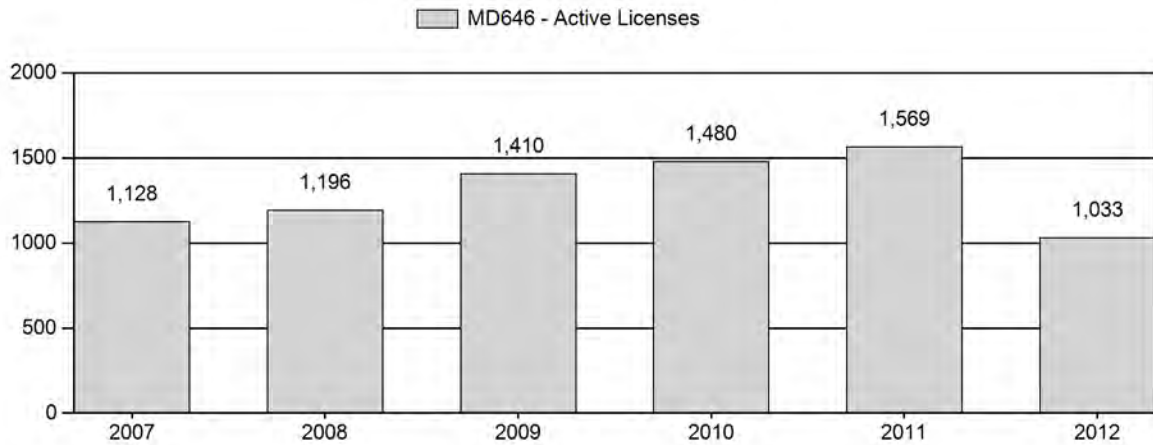
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	2.1%	0%
Males \geq 1 year old:	26.1%	26.6%
Juveniles (< 1 year old):	0.0%	0%
Total:	5.3%	4.9%
Proposed change in post-season population:	-9.4%	+1.3%

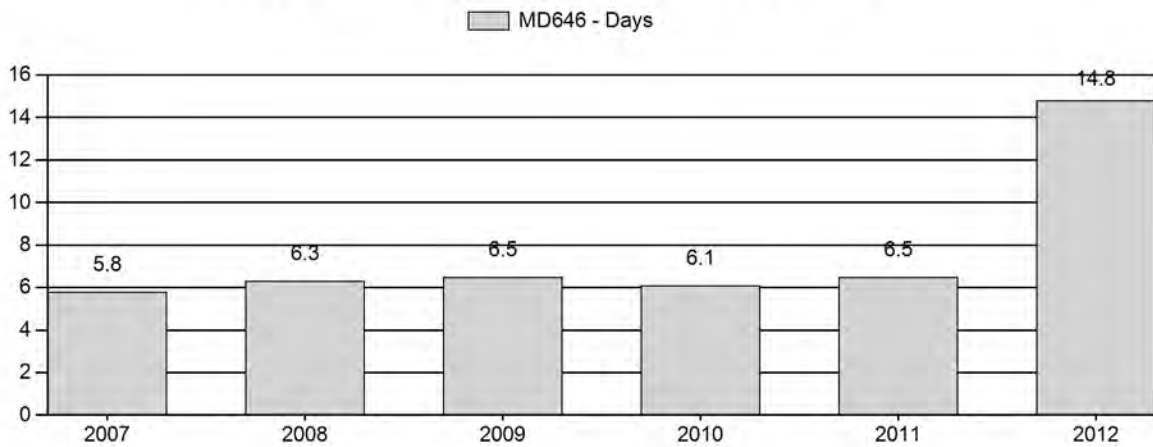
Population Size - Postseason



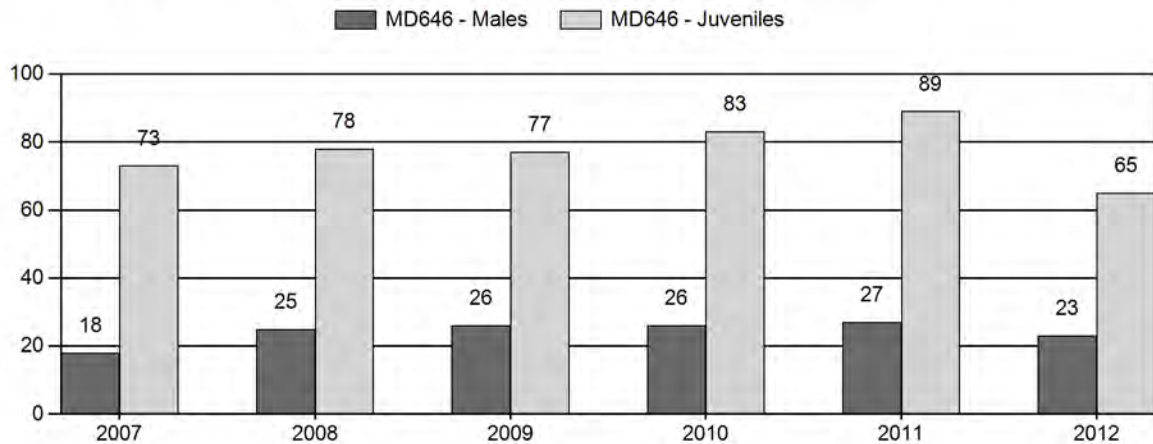
Active Licenses



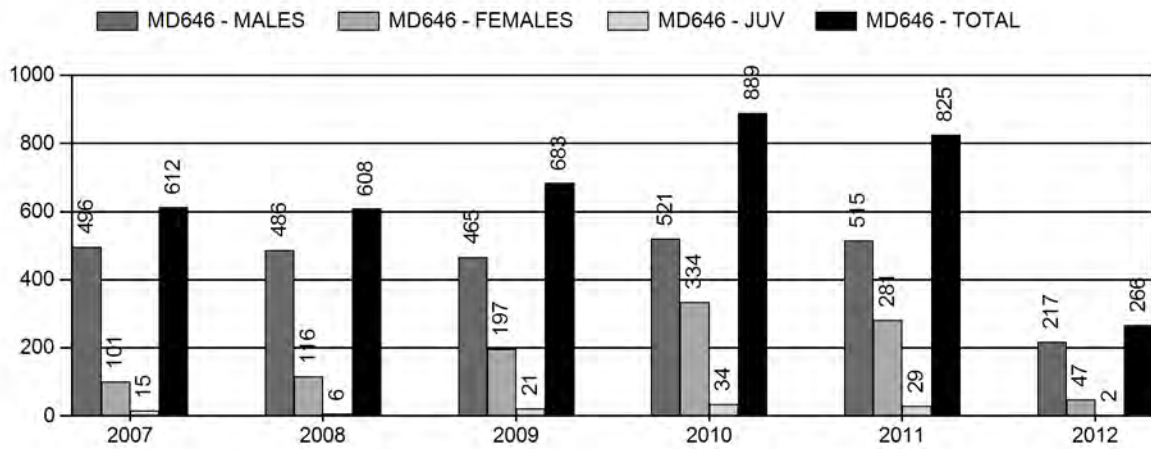
Days per Animal Harvested



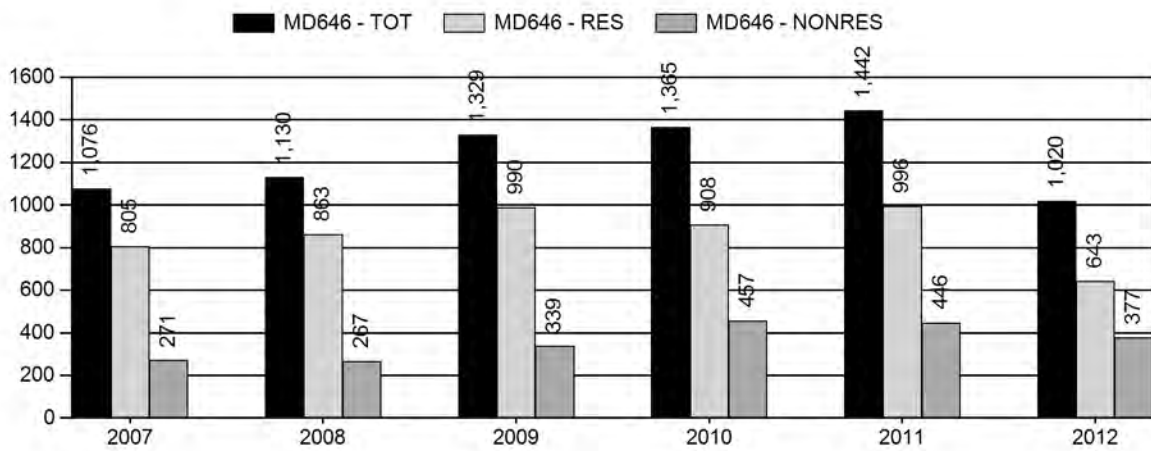
Postseason Animals per 100 Females



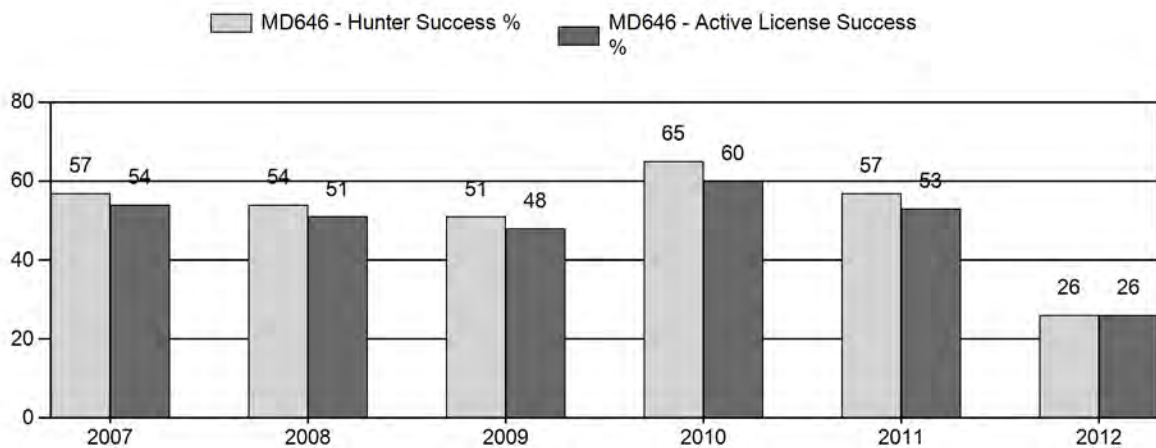
Harvest



Number of Hunters



Harvest Success



2007 - 2012 Postseason Classification Summary

for Mule Deer Herd MD646 - SWEETWATER

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylg	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	4,905	55	69	124	9%	692	52%	503	38%	1,319	1,230	8	10	18	± 2	73	± 5	62
2008	5,806	99	126	225	12%	894	49%	701	39%	1,820	1,415	11	14	25	± 2	78	± 4	63
2009	5,732	138	167	305	13%	1,186	49%	909	38%	2,400	1,407	12	14	26	± 2	77	± 3	61
2010	5,523	72	82	154	12%	598	48%	494	40%	1,246	1,549	12	14	26	± 3	83	± 6	66
2011	5,235	49	101	150	13%	547	46%	486	41%	1,183	1,616	9	18	27	± 3	89	± 6	70
2012	4,741	48	58	106	12%	462	53%	302	35%	870	996	10	13	23	± 3	65	± 6	53

2013 HUNTING SEASONS
Sweetwater Mule Deer Herd Unit (MD 646)

HUNT AREA	TYPE	Season Dates		Limited Quota	LIMITATIONS
OPENS	CLOSES				
96		Oct. 15	Oct. 22		General license; antlered mule deer three (3) points or more on either antler or any white-tailed deer
97		Oct. 15	Oct. 22		General license; antlered mule deer three (3) points or more on either antler or any white-tailed deer
	3	Nov. 1	Nov. 30	25	Limited quota licenses; any white-tailed deer
	8	Nov. 1	Nov. 30	25	Limited quota licenses; doe or fawn white-tailed deer
Archery 96, 97		Sept. 1	Sept. 30		General license - any deer Limited quota; Refer to Section 3 of this Chapter

Region E Non-Resident Quota: 600

Hunt Area	Type	Change from 2012
92, 94, 96	6	-25
97	6	-50
97	8	+25
	6	-75
	8	+25
Total MD646		-50

Region E -200

MANAGEMENT EVALUATION

Current Management Objective: 6,000

Management Strategy: Recreation (20-30 bucks/100 does)

2012 Post-season Population Estimate: ~4,800

2013 Post-season Population Estimate: ~4,800

Herd Unit Issues

This population declined dramatically in the early 1990s following a series of drought years and a harsher than normal winter in 1992. The population fluctuated greatly throughout the 1990s and early 2000s. From 2004- 2009, fawn recruitment improved, leading to population growth. However, mule deer populations have declined noticeably in the Sweetwater Mule Deer Herd Unit and elsewhere in their range in the past few years. The 2012 post-season population estimate is about 4,800 mule deer, about 21% below objective.

Weather/Habitat

Weather conditions have been variable for several years, with winter mortality apparently resulting from crusted snow conditions in winter 2009-10, followed by cold, wet, and snowy conditions occurring well into June 2010. Winter 2010-11 seemed to duplicate these conditions with crusted snow, followed by cold, wet spring weather impacting newborn fawns. Drought conditions have been extreme to exceptional for the past year, beginning with minimal snowfall in winter 2011-12 and continuing with almost no precipitation during spring and summer 2012.

This resulted in an almost complete lack of herbaceous or browse forage production across the herd unit. Thus, poor body condition was observed in many mule deer by late-summer, especially lactating females attempting to raise fawns into fall. Many does were observed in late-August and September with backbones and ribs showing. In spite of fairly mild winter conditions in 2012-13, early winter mortality was probably above average due to the poor body condition of mule deer entering winter.

By early April, drought was expected to worsen through 2013. However, a series of late winter/early spring snow storms produced snow through early May in Jeffrey City, with more at higher elevations such as Green Mountain and Beaver Rim. These storms have proven helpful in lessening the effects of drought, yet they only helped change the drought status from Extreme to Severe. Additionally, the snow/precipitation amounts were significantly lower than in Lander, where over 58" of snow was received since March 1, 2013. Unless more precipitation is received in May and June, little habitat improvement (especially shrubs, aspen, and riparian) will be achieved.

Population Data

Classification flights were conducted in December 2012, with winter ranges surveyed using a Bell 206 Jet Ranger helicopter in Hunt Area 96 and from the ground in Hunt Area 97 in January 2013, but deer were difficult to see due to lack of snow cover and scattered distribution on winter ranges. The 2012 post-season fawn/doe ratio decreased to 65J/100F with an observed total buck/doe ratio of 23M/100F. Three (3) point antler restrictions were implemented for the 2012 hunting season to reduce hunting pressure and buck harvest, which occurred. However, the reduced buck/doe ratio was unexpected. Despite protecting yearling bucks with this harvest restriction, the yearling buck/doe ratio barely increased to 10YM/100F.

Harvest Data

Weather during the past 3 hunting seasons was very mild in the Sweetwater Herd Unit. Warm temperatures and little snow created major shifts in mule deer distribution; many deer were at much higher elevations during the hunting season than in the past. Hunters reported fewer and lower "quality" bucks and fewer mule deer overall, but where doe and fawn groups were found, they felt there were good numbers of fawns. In response to public desire to reduce hunter densities and reduce buck harvest, we implemented three (3) point antler restrictions in 2012, which resulted in 17% fewer general license hunters and 57% fewer bucks being harvested than in 2011, and caused general license hunter success to drop to 23%. The "days per animal harvested" statistics for general licenses, as an indicator of hunter effort, increased to 16.8 days in 2012. Doe/fawn hunting in response to damage issues in Hunt Area 97 resulted in minimal harvest of 38 does and 2 fawns.

Population

A spreadsheet model was developed for this population in 2012, utilizing post-season classification and harvest data from 1994-2012. The TSJ, CA model produces population estimates most closely aligned with trends observed in buck harvest, fawn recruitment, and buck/doe ratios and more closely aligns with the professional perceptions of field personnel. As a result, the TSJ, CA model was selected as the best fit model, despite having a higher Relative AICc value. This spreadsheet model (TSJ, CA) is considered FAIR, and should be used for bio-year 2012 with a post-season estimate of about 4,800 mule deer.

Management Summary

Mule deer populations have declined noticeably in this herd unit and elsewhere in their range in the past 2 years. We made significant changes to the hunting seasons for 2012 and 2013 in response to the decline. The following is a synopsis of those changes and the expected results. A series of public meetings were held in December 2011 and again in 2012, and many of these changes were requested, if not demanded, at those meetings. In this analysis, both the South Wind River and Sweetwater Mule Deer Herd Units are essentially treated as one larger unit, since hunting seasons and historic hunter use has been quite similar. We believe these trends need to continue, since differences in hunting seasons between these areas could result in benefits in one herd unit at the expense of the other. In order to achieve the desired results, current and future proposals will consider similar general license season structure in both herd units (unless sufficient evidence indicates differences are needed).

The 2013 seasons will result in considerable decreases in hunter numbers and mule deer harvest, due to 3 main reasons:

1. Antler point restrictions for General Licenses in Hunt Areas 96 and 97 (Antlered mule deer with three (3) points or more on either antler or any white-tailed deer). Youth General License holders will still be allowed to harvest ANY deer in these areas.
2. Elimination of female mule deer harvest by removing Doe/Fawn licenses (Type 6).
3. Opening day (October 15) is a Tuesday, which is likely to delay hunting pressure until the weekend of Oct. 19 & 20 and will also likely reduce hunter numbers and harvest.

This is the second of a 2 year evaluation period as was presented to the public in the 2012 season setting process. We plan to re-evaluate this season structure following the 2013 season based on whether:

1. Population improves toward objective.
2. Hunter success improves to $\geq 50\%$ for general license hunters by 2013.

However, as a result of drought, which wasn't anticipated upon setting these criteria, the population has declined and we don't anticipate significant population growth if conditions don't improve. Also, as described above, the buck/doe ratio declined in spite of antler point restrictions. With declining or stable population and buck ratio trends, reaching 50% general license success seems improbable.

White-tailed deer hunts are again being offered for Hunt Area 97, with 25 Type 3 licenses (Any white-tailed deer) along with 25 Type 8 doe/fawn white-tailed licenses valid in November.

Hunters have voiced numerous concerns about too many non-residents (particularly on Green Mountain in Hunt Area 96) during hunting seasons and at public meetings. The 2012 harvest survey indicates 37% of the general license hunters in Area 96 were non-residents, well above the traditional proportion of 20% allocated to non-residents during drawings. Recognizing these concerns and in response to reduced mule deer numbers, we reduced the non-resident Region E quota from 800 to 600.

We estimate the 2013 season structure should result in a harvest of approximately 250 buck mule deer. With anticipated fawn survival, this should allow for a stable population of about 4,800 mule deer after the 2013 hunting season.

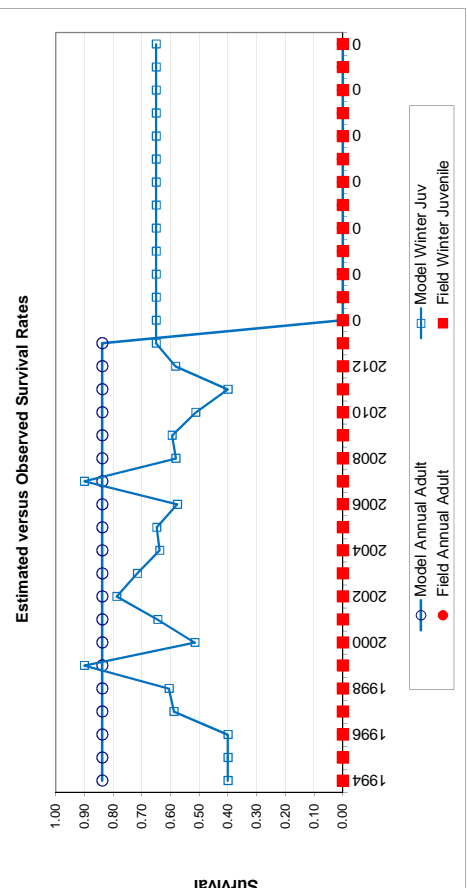
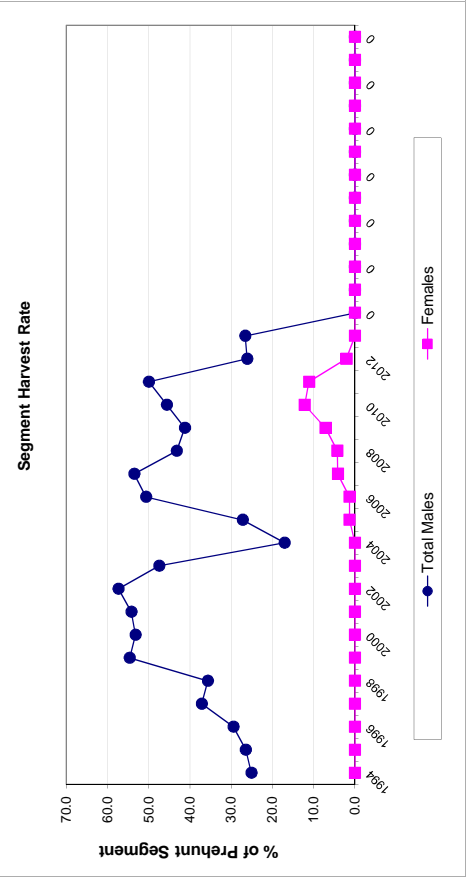
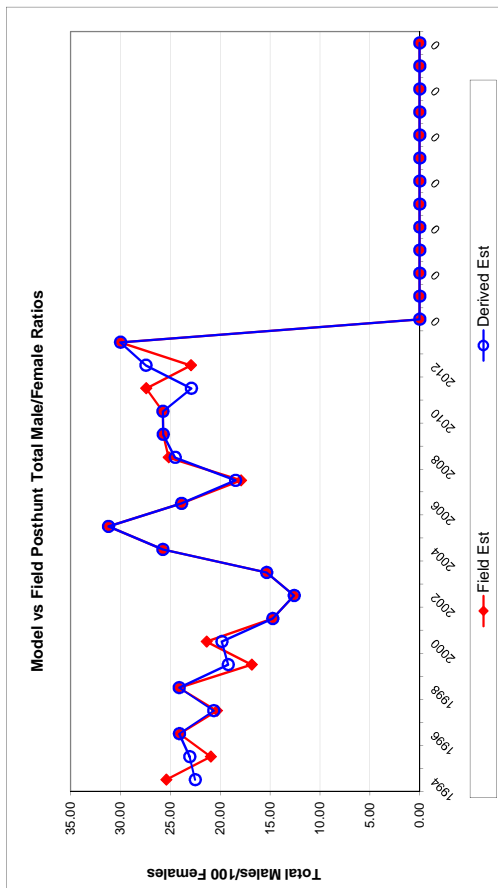
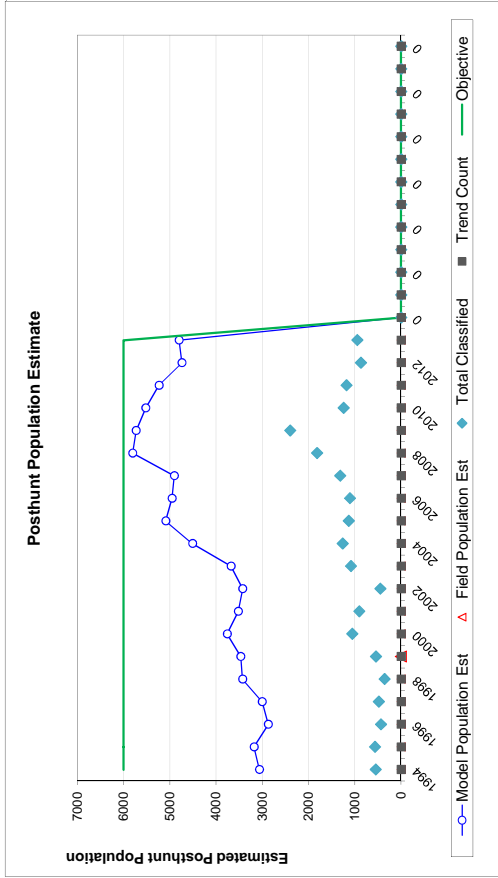
Survival and Initial Population Estimates

[illegible]

Parameters:	Optim cells
Adult Survival =	0.838
Initial Total Male Pop/10,000 =	0.039
Initial Female Pop/10,000 =	0.174

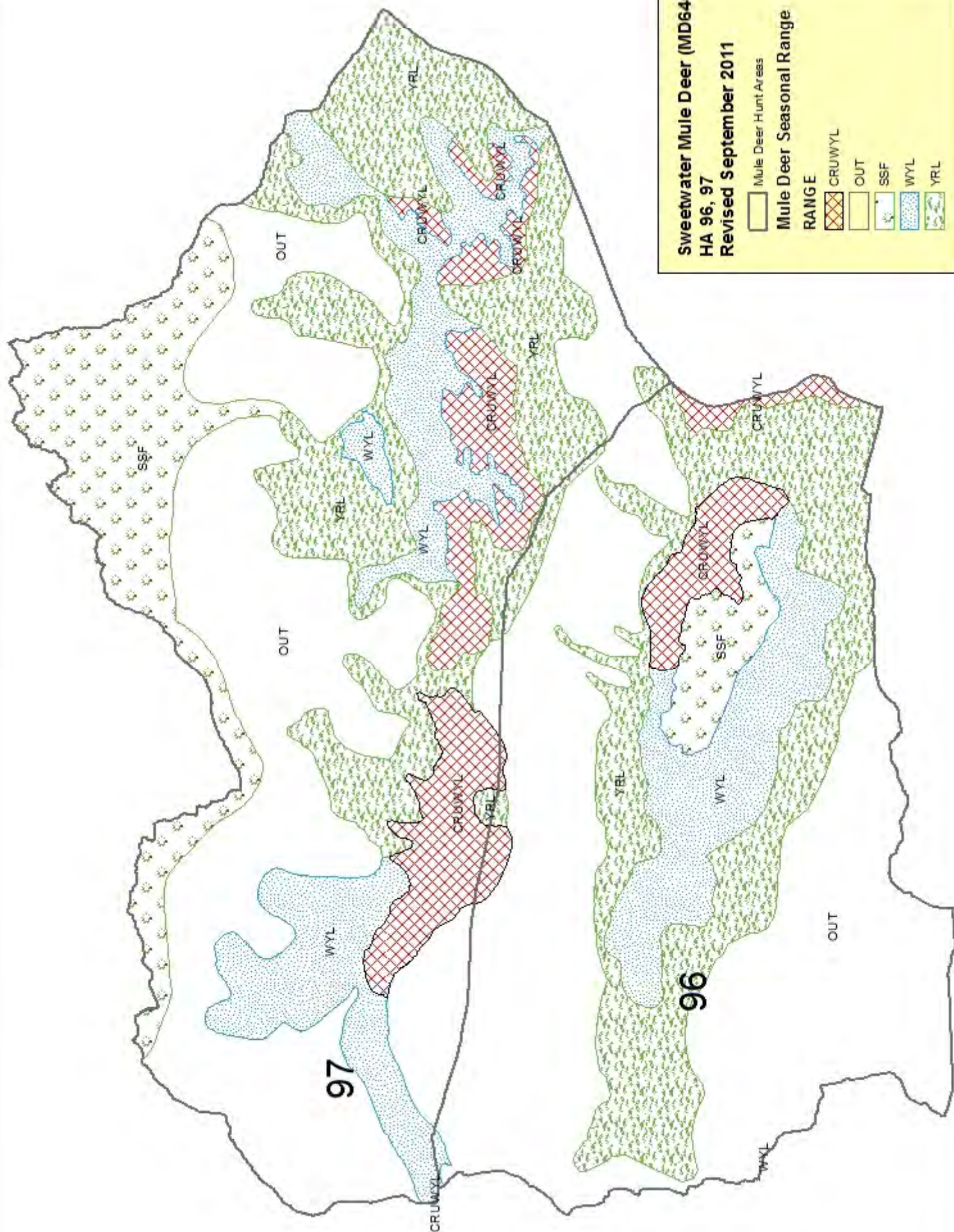
MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%

FIGURES



Comments:

END



2012 - JCR Evaluation Form

SPECIES: Mule Deer
 HERD: MD647 - FERRIS
 HUNT AREAS: 87

PERIOD: 6/1/2012 - 5/31/2013

PREPARED BY: GREG HIATT

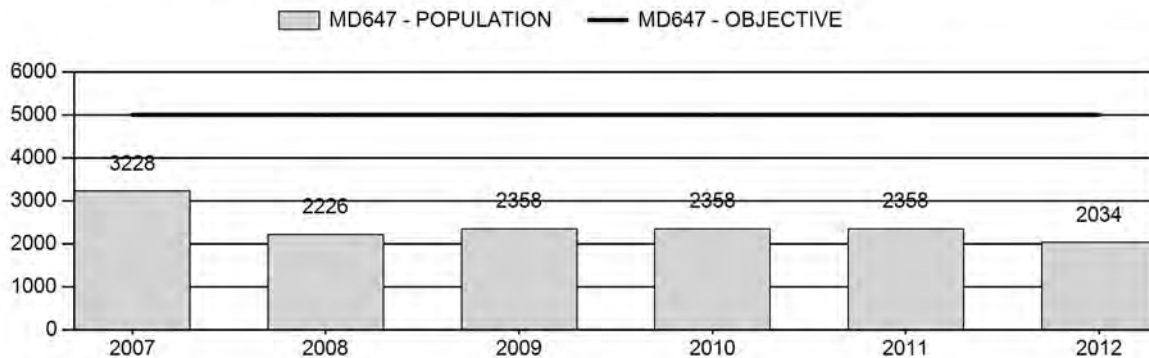
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	2,506	2,034	2,118
Harvest:	148	64	32
Hunters:	187	86	43
Hunter Success:	79%	74%	74 %
Active Licenses:	187	86	43
Active License Percent:	79%	74%	74 %
Recreation Days:	958	488	240
Days Per Animal:	6.5	7.6	7.5
Males per 100 Females	35	44	
Juveniles per 100 Females	59	27	

Population Objective: 5,000
 Management Strategy: Recreational
 Percent population is above (+) or below (-) objective: -59.3%
 Number of years population has been + or - objective in recent trend: 20
 Model Date: 03/10/2013

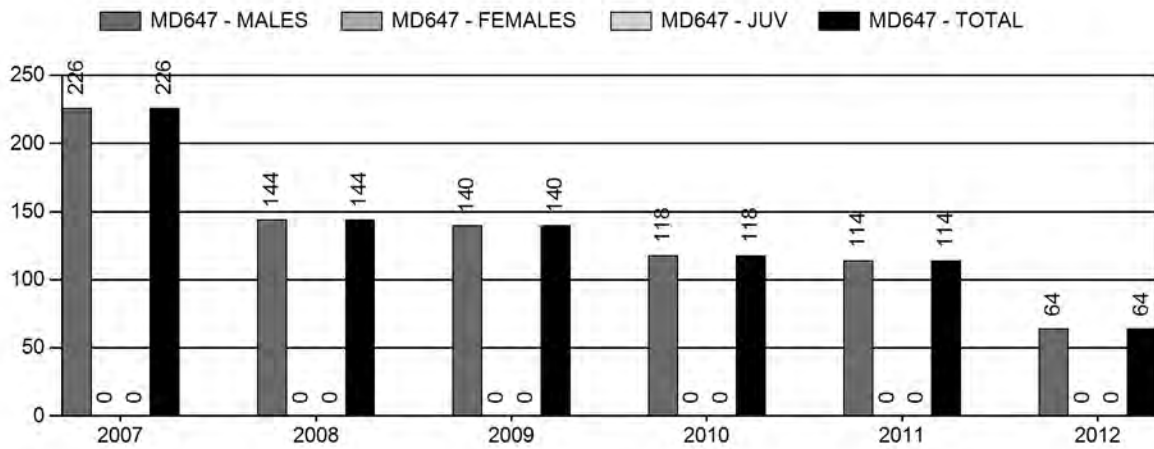
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0.0%	0%
Males \geq 1 year old:	8.7%	6.4%
Juveniles (< 1 year old):	0.0%	0%
Total:	2.15%	1.5%
Proposed change in post-season population:	6.3%	+4.1%

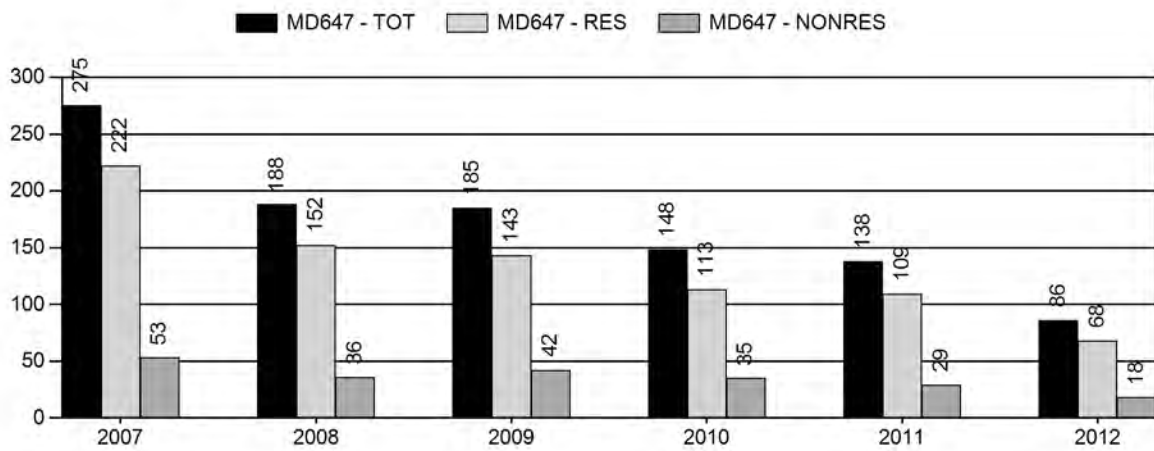
Population Size - Postseason



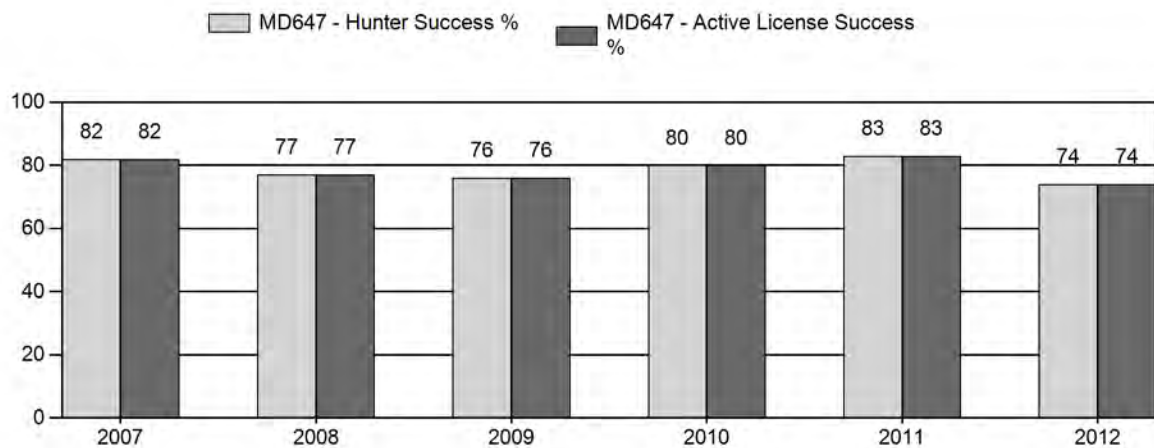
Harvest



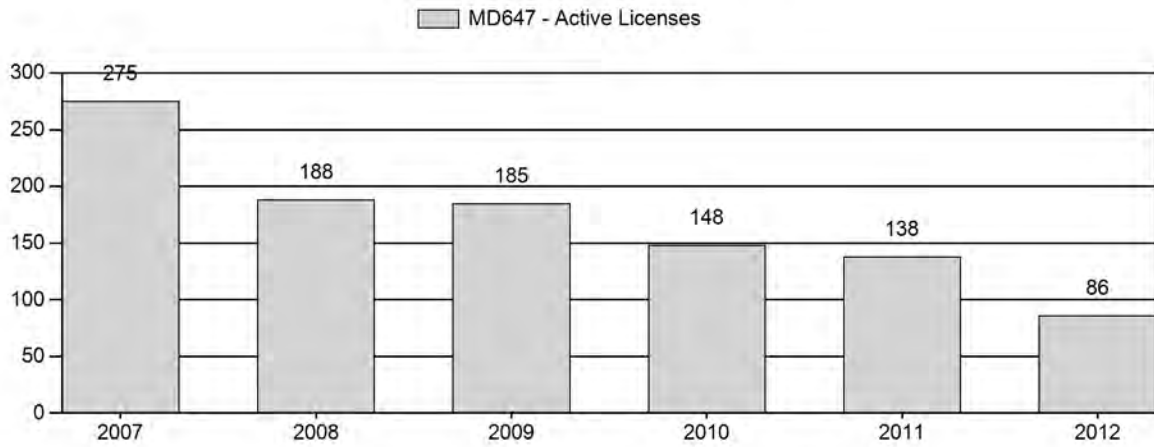
Number of Hunters



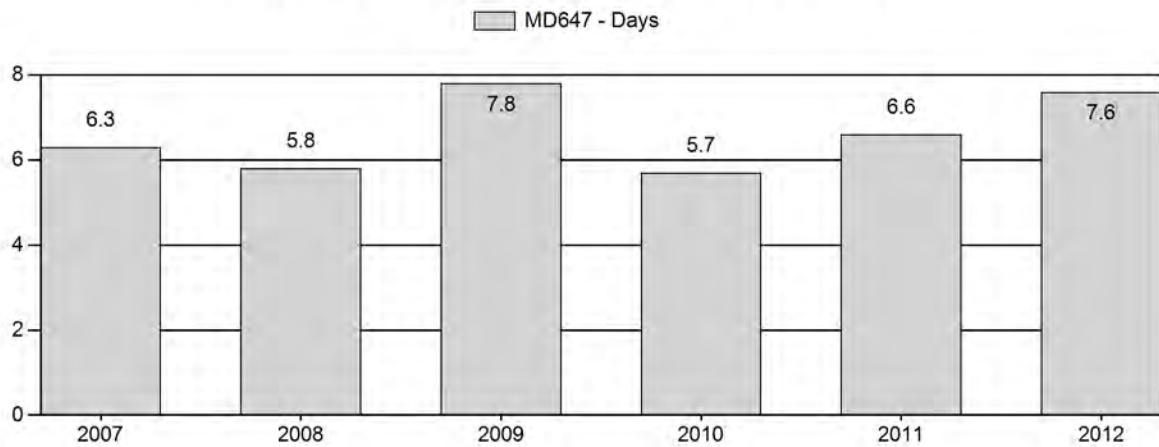
Harvest Success



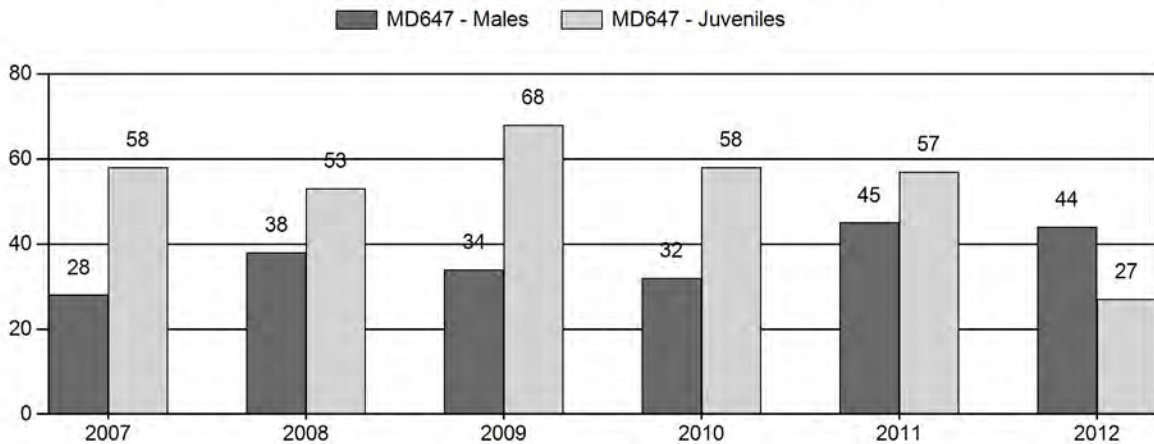
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Mule Deer Herd MD647 - FERRIS

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot Cls	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	3,228	56	97	153	15%	538	54%	311	31%	1,002	834	10	18	28	± 3	58	± 4	45
2008	2,226	57	101	158	20%	416	52%	221	28%	795	766	14	24	38	± 4	53	± 5	39
2009	2,358	55	87	142	17%	419	49%	286	34%	847	1,036	13	21	34	± 3	68	± 5	51
2010	2,358	51	71	122	17%	381	53%	222	31%	725	849	13	19	32	± 4	58	± 5	44
2011	2,358	50	111	161	22%	356	49%	204	28%	721	867	14	31	45	± 5	57	± 5	39
2012	2,034	0	0	125	26%	281	58%	75	16%	481	0	0	0	44	± 5	27	± 4	18

**2013 HUNTING SEASONS
FERRIS MULE DEER HERD (MD647)**

Hunt Area	Type	Dates of Seasons		Quota	Limitations
		Opens	Closes		
87	1	Oct. 15	Oct. 31	50	Limited quota; antlered deer
Archery					
87		Sep. 1	Sep. 30		Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2012
87	1	-50
Total	1	-50

Management Evaluation

Current Management Objective: 5,000

Management Strategy: Recreational

2012 Postseason Population Estimate: ~2,025

2013 Proposed Postseason Population Estimate: ~2,120

The management objective for the Ferris Mule Deer Herd Unit is a post-season population objective of 5,000 deer. The current management strategy is recreational management, but the herd is undergoing review to change management status of this herd to “special.” The objective and management strategy were last publicly reviewed in 1994.

Herd Unit Issues

The 2012 post-season population estimate was about 2,025 with the population trending slowly downward from a high of about 3,000 deer in 2003. The herd was last near objective size prior to the 1992-93 winter. Restricted hunting access to major blocks of private and checkerboarded lands has concentrated hunting pressure on the remaining portions of the area, making it difficult to manage buck numbers and quality in the remaining portions of the herd.

Weather

Losses were above normal during the 2010-11 winter because of a pre-Christmas snowstorm that laid a blanket of hard, crusted snow across most winter ranges that did not clear off until the second half of February, followed by cold, wet storms during early spring. This was followed by drought conditions in 2012, with almost no precipitation throughout the spring and summer. Drought was classified as moderate in April, severe in May and then extreme for all subsequent months through February 2013. Body condition of the few harvested deer checked was poor.

Given the poor condition of animals at the end of fall, mortality is expected to be above average during the 2012-13 winter, particularly following three severe winter storms in April.

Habitat

Lack of fire has resulted in decadent shrub stands encroached by conifer in this herd unit. Severe drought has reduced the quantity and quality of forage for mule deer. Two browse transects have been established in this herd unit, but one was burned by fire in 2012 and the other was not read.

Over the past several years the Rawlins BLM has implemented prescribed burns in the Seminole and Ferris Mountains, partly to address conifer encroachment while also rejuvenating decadent mountain mahogany and bitterbrush stands. In the summer of 2012, two large wildfires in the Seminole Mountains and the eastern Ferris Mountains burned thousands of acres, including crucial mule deer winter habitat as well as year round habitats. These prescribed burns and the recent wildfires should ultimately benefit mule deer productivity in the long term with the return of young vigorous shrub complexes.

The Seminole Fire burned over 3,800 acres in the Seminole Mountains including areas within Morgan Creek WHMA. Rawlins BLM coordinated and funded aerial application of Plateau® to mitigate cheatgrass spread on BLM and WGFD managed areas within the fire perimeter. The wildfire enveloped several previously planned prescribed burns, although not with the desired prescriptions.

WGFD successfully negotiated with the BOR an extension of a twenty-five year Memorandum of Agreement. WGFD will continue to have primary management responsibility of Morgan Creek WHMA.

Field Data

Despite conservative seasons, deer numbers have slowly declined over the two decades due to several severe winters and persistent drought conditions. Poor habitat conditions, on all seasonal ranges, have prevented the rapid population response that was seen after similar weather events in previous decades. Fawn:doe ratios have remained low in most years, preventing recovery of the population. Despite improved fawn production in 2009, production declined to 58:100 in 2010, 57:100 in 2011 and only 27:100 in 2012.

At 44:100, the observed buck:doe ratio in 2012 was little changed from the 45:100 seen in 2011. Hunter access is greatly restricted to large portions of this herd, yielding segments of the population that are essentially unhunted. Rapid fluctuations in past buck:doe ratios is suspected to have been caused by changes in how observers surveyed between hunted and unhunted segments of the herd. Classification surveys the past six years have attempted to have uniform coverage of all winter ranges, yielding more representative ratios. Ratios are still skewed, with a significant proportion of the bucks in the sample coming from areas with limited or no public access.

Harvest Data

License quotas were reduced by a third following the 2007-08 winter but the buck:doe ratio continued to decline in 2009 and 2010. While exceeding the maximum for recreational management, the 34:100 seen in 2009 and 32:100 in 2010 barely exceeded the maximum criterion for recreational management and are marginal for “special” management, which most hunters and landowners expect in this herd unit. Buck:doe ratios improved in 2011 and 2012, but large numbers of the mature bucks observed were in portions of the area not available to the majority of hunters.

Hunter success declined and the average number of days hunted per deer harvested increased in 2012, despite the significant drop in license quota. Combined with the smallest classification sample in 27 years, and a downward trend noted by hunters, landowners and WGFD field personnel, these data suggest the population is at a long-term low. As in 2011, most hunters were disappointed with the supply of mature bucks in 2012. With the low numbers of permits allowed in this slow growing herd, hunters have come to expect better opportunities to see and harvest larger bucks than available in neighboring general license, more productive herds. High demand for these licenses is attributed as much to an expectation of high buck quality as it is for a less crowded hunting experience. To accommodate this demand and address hunter comments about poor buck quality received in the field and at Department meetings, the license quota was decreased further to 50 licenses in 2013.

Population

The Time-Specific Juvenile & Constant Adult Survival (TSJ/CAS) spreadsheet model provided the best fit with observed buck:doe ratios for this herd, and the model behaved predictably when 2012 classification and harvest data were added. Annual adult survival was predicted at 80 percent, a reasonable level. However, best fit with observed buck:doe ratios did not arise unless juvenile survival was also held constant, at 65 percent. This model, while matching well with observed buck:doe ratios and tracking with classification sample sizes, had an exceptionally high AICc value of 1206 and is evaluated as “poor”. A model with lower AICc values was obtained using the simpler Constant Juvenile – Constant Adult Mortality Rate which also tracked well with classification sample sizes, but simulated buck:doe ratios were well below observed. This model predicted population sizes roughly 10 percent lower than the TSJ/CAS model. Buck:doe ratios for this herd are skewed high because most hunters are denied access to major portions of the area. It may be more useful to weight ratios according to the segment of the herd sampled, rather than simply combining all data into one sample, and then use the simpler CJ/CA model to align with those values.

Due to the poor condition of animals going into the 2012-13 winter and projections of continued drought in 2013, fawn production in 2013 was projected to be similar to that seen in 2012. Similarly, the model was run with low juvenile survival in 2013. The resultant model predicts an increase of less than 5 percent in herd size in 2013. If drought conditions abate, the large acreages of treated habitat may improve fawn production and survival and provide for significant herd growth in the near future.

Management Summary

Expected harvest from this season proposal would be roughly 32 buck deer. The limited quota hunt is compatible with the application booklets. As in the previous 17 years, these licenses are valid only for antlered deer during the regular season. The quota is reduced by half from that available in 2012. With the herd so far below objective, no doe harvest is warranted and no doe/fawn licenses are available. Youth hunters and archers in the special archery season will still be able to harvest antlerless deer.

Opening date is traditional, coincides with hunts in neighboring areas in Regions D and E, and is consistent with the application booklets. Closing date is the same as in the previous 13 years. Archery season dates are standard and the same as used in previous years.

Through their expectations and demand, hunters, landowners and outfitters have placed this area into *de facto* special management. A proposal to recognize this public demand and change management status of this herd to “special” is planned for 2013. The 45:100 and 44:100 buck:doe ratios recorded in 2011 and 2012 would then be within the expected range.

INPUT	
Species:	Mule Deer
Biologist:	Greg Hiatt
Herd Unit & No.:	MD647 Ferris
Model date:	03/10/13

MODELS SUMMARY				Notes
			Relative AICc	
			Fit	
CJ,CA	Constant Juvenile & Adult Survival		381	
SCJ,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival		172	
TSJ,CA	Time-Specific Juvenile & Constant Adult Survival		601	

Population Estimates from Top Model										
Year	Posthunt Population Est.		Trend Count		Predicted Prehunt Population			Predicted Posthunt Population		
	Field Est	Field SE			Juveniles	Total Males	Females	Total	Juveniles	Total Males
1993					757	427	1452	2635	753	330
1994					650	509	1349	2508	650	401
1995					776	532	1267	2575	776	444
1996					799	607	1266	2673	799	488
1997					720	650	1273	2642	720	511
1998					1035	643	1252	2930	1035	522
1999					968	754	1338	3060	968	553
2000					805	757	1385	2947	805	534
2001					912	689	1370	2971	912	542
2002					808	730	1392	2930	808	586
2003					1070	731	1376	3177	1070	576
2004					844	808	1449	3101	844	616
2005					631	767	1415	2813	631	533
2006					610	631	1337	2579	610	419
2007					733	534	1268	2535	733	285
2008					665	466	1253	2384	665	308
2009					832	463	1218	2512	832	309
2010					725	517	1245	2487	725	387
2011					706	546	1232	2483	706	420
2012					324	566	1215	2104	324	495
2013					574	501	1077	2153	574	466
2014										
2015										
2016										
2017										
2018										
2019										
2020										
2021										
2022										
2023										
2024										
2025										

Survival and Initial Population Estimates

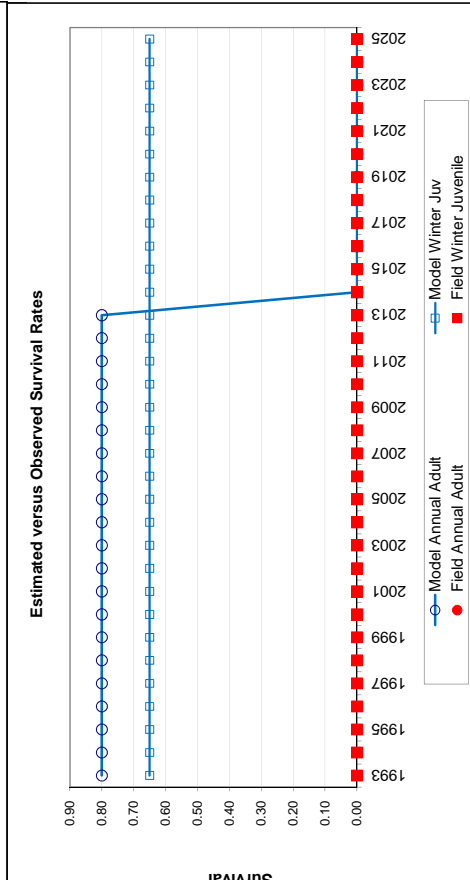
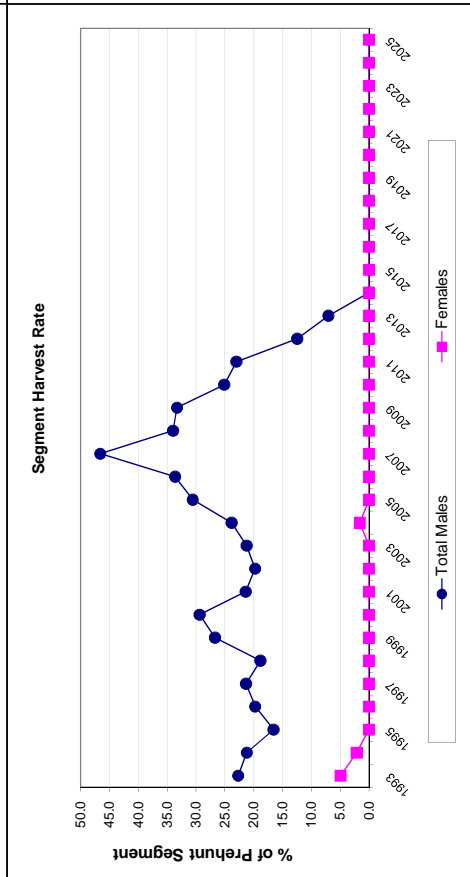
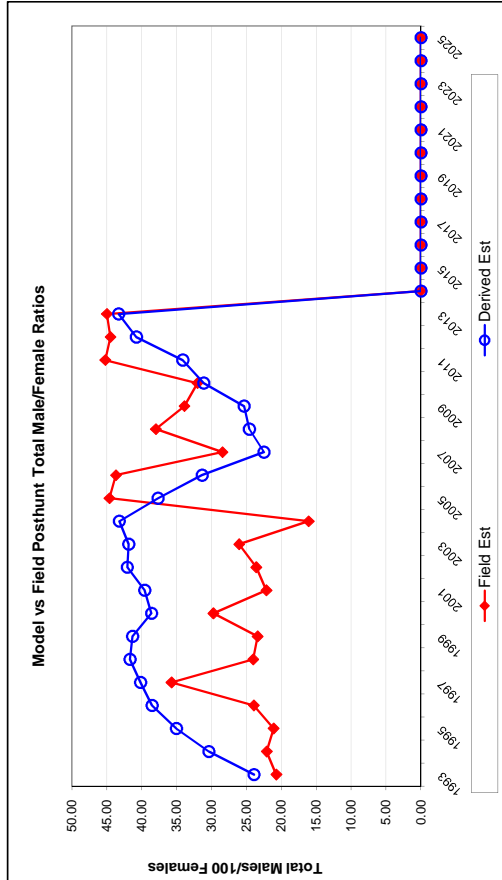
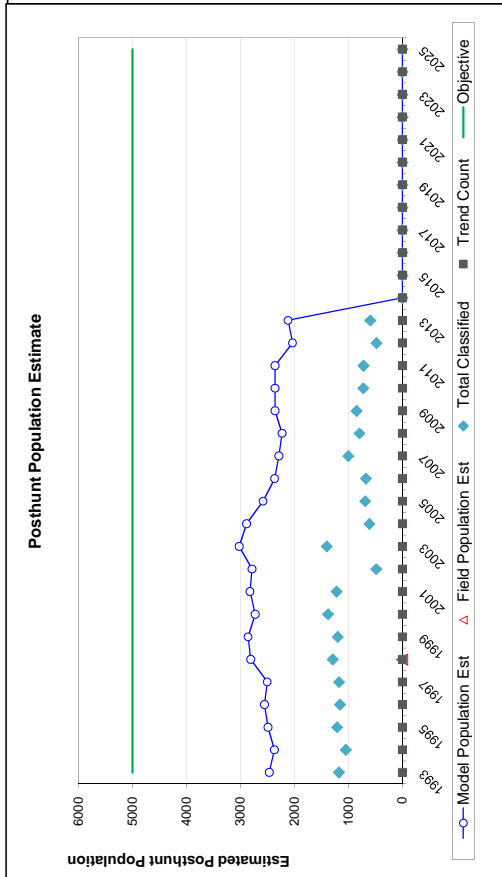
Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1993	0.65		0.80	
1994	0.65		0.80	
1995	0.65		0.80	
1996	0.65		0.80	
1997	0.65		0.80	
1998	0.65		0.80	
1999	0.65		0.80	
2000	0.65		0.80	
2001	0.65		0.80	
2002	0.65		0.80	
2003	0.65		0.80	
2004	0.65		0.80	
2005	0.65		0.80	
2006	0.65		0.80	
2007	0.65		0.80	
2008	0.65		0.80	
2009	0.65		0.80	
2010	0.65		0.80	
2011	0.65		0.80	
2012	0.65		0.80	
2013	0.65		0.80	
2014	0.65		0.80	
2015	0.65		0.80	
2016	0.65		0.80	
2017	0.65		0.80	
2018	0.65		0.80	
2019	0.65		0.80	
2020	0.65		0.80	
2021	0.65		0.80	
2022	0.65		0.80	
2023	0.65		0.80	
2024	0.65		0.80	
2025	0.65		0.80	

Parameters:		Optim cells
Adult Survival =		0.800
Initial Total Male Pop/10,000 =		0.033
Initial Female Pop/10,000 =		0.138

MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%

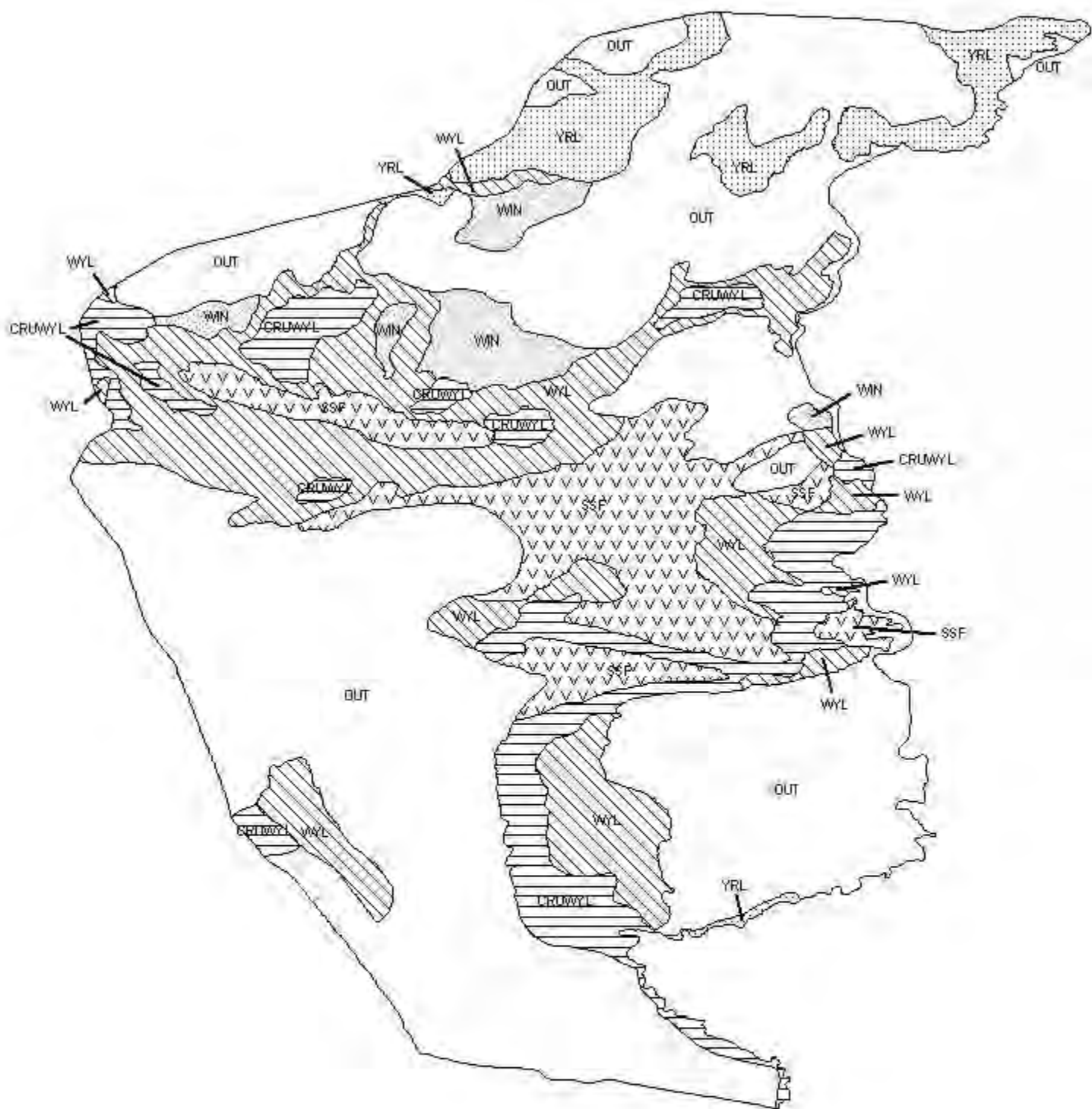
Classification Counts										Harvest		
Year	Juvenile/Female Ratio			Total Male/Female Ratio				Segment Harvest Rate (% of			Total Males	Females
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/o bull adj	Field SE	Juv	Males	Females	Total Harvest		
1993		54.55	3.54	23.91	20.72	1.93	4	88	65	157	22.7	4.9
1994		49.26	3.47	30.37	22.09	2.10	0	98	26	124	21.2	2.1
1995		61.24	3.86	35.03	21.12	1.96	0	80	0	80	16.5	0.0
1996		63.11	4.08	38.51	23.95	2.19	0	109	0	109	19.7	0.0
1997		55.56	3.81	40.16	35.74	2.82	0	126	0	126	21.3	0.0
1998		82.69	4.92	41.68	24.04	2.19	0	110	0	110	18.8	0.0
1999		72.34	4.52	41.30	23.40	2.17	0	183	0	183	26.7	0.0
2000		58.12	3.54	38.59	29.74	2.29	0	202	0	202	29.4	0.0
2001		66.56	4.14	39.56	22.14	2.05	0	134	0	134	21.4	0.0
2002		58.05	5.86	42.07	23.60	3.30	0	131	0	131	19.7	0.0
2003		77.73	4.48	41.86	26.06	2.19	0	141	0	141	21.2	0.0
2004		59.20	5.20	43.21	16.09	2.32	0	175	21	196	23.8	1.6
2005		44.63	4.22	37.66	44.63	4.22	0	213	0	213	30.5	0.0
2006		45.66	4.32	31.35	43.70	4.19	0	193	0	193	33.6	0.0
2007		57.81	4.12	22.48	28.44	2.61	0	226	0	226	46.6	0.0
2008		53.13	4.42	24.58	37.98	3.55	0	144	0	144	34.0	0.0
2009		68.26	5.24	25.33	33.89	3.29	0	140	0	140	33.3	0.0
2010		58.27	4.92	31.11	32.02	3.33	0	118	0	118	25.1	0.0
2011		57.30	5.03	34.12	45.22	4.30	0	114	0	114	23.0	0.0
2012		26.69	3.47	40.76	44.48	4.78	0	64	0	64	12.4	0.0
2013		53.33	5.22	43.29	45.00	4.66	0	32	0	32	7.0	0.0
2014												
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												

FIGURES



Comments:

END



Mule Deer (MD647) - Ferris
HA 87
Revised - 3/91



2012 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2012 - 5/31/2013

HERD: MD648 - BEAVER RIM

HUNT AREAS: 90

PREPARED BY: GREG
ANDERSON

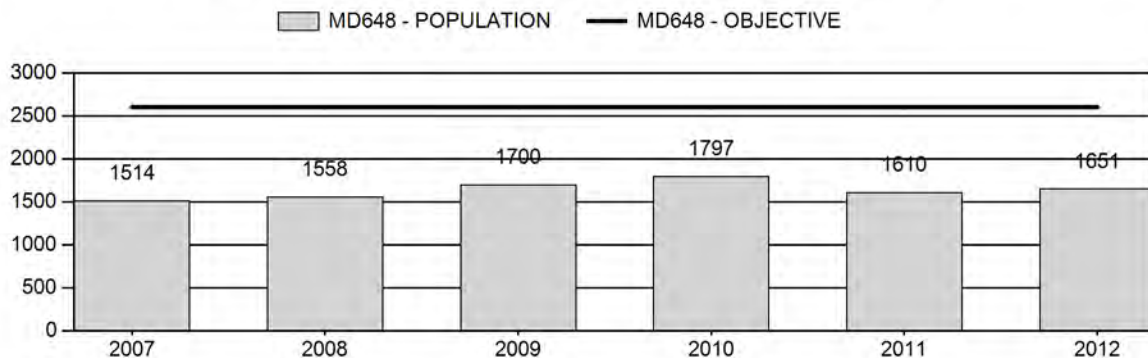
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	1,636	1,651	1,756
Harvest:	94	76	60
Hunters:	112	100	75
Hunter Success:	84%	76%	80%
Active Licenses:	112	100	60
Active License Percent:	84%	76%	100%
Recreation Days:	647	684	600
Days Per Animal:	6.9	9	10
Males per 100 Females	40	28	
Juveniles per 100 Females	49	32	

Population Objective: 2,600
 Management Strategy: Special
 Percent population is above (+) or below (-) objective: -36.5%
 Number of years population has been + or - objective in recent trend: 10
 Model Date: 2/20/2013

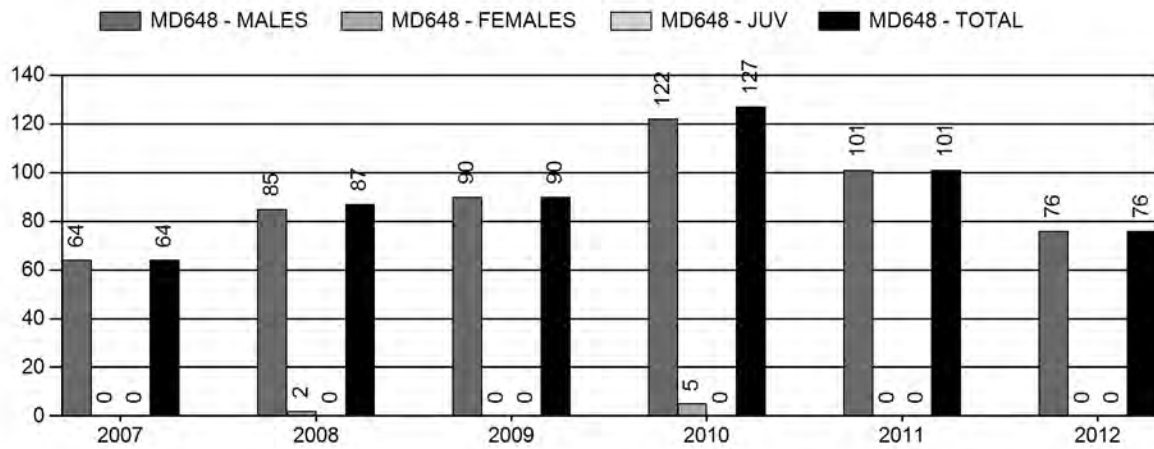
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0%	0%
Males \geq 1 year old:	21%	20%
Juveniles (< 1 year old):	0%	0%
Total:	4%	3%
Proposed change in post-season population:	+2%	+6%

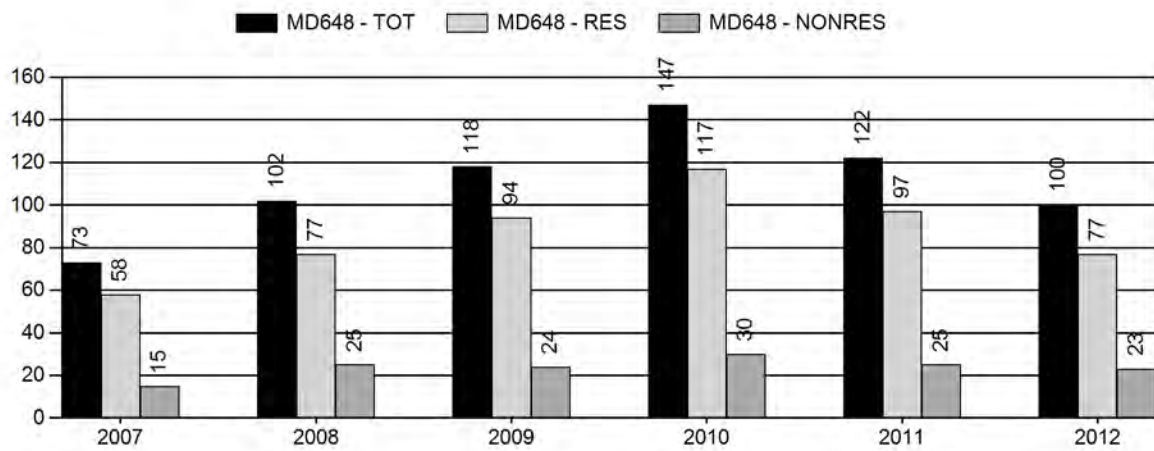
Population Size - Postseason



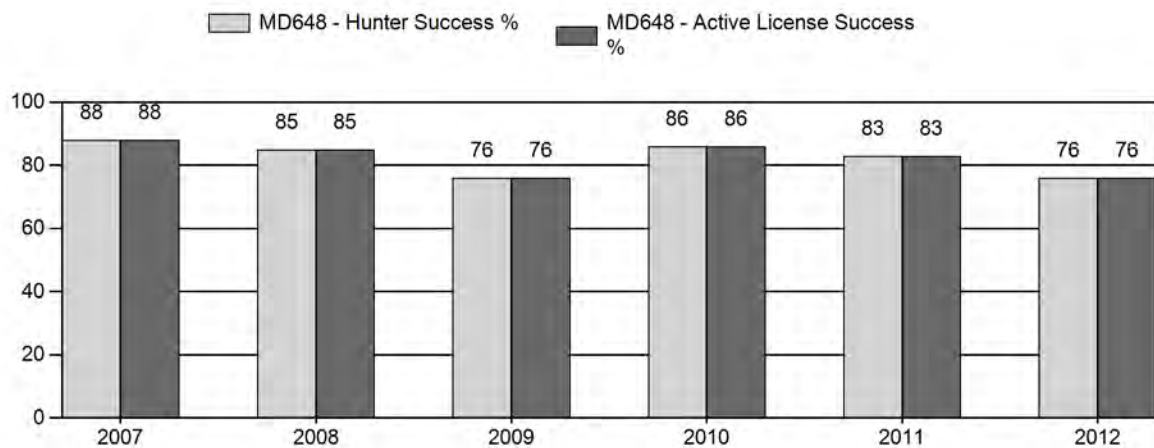
Harvest



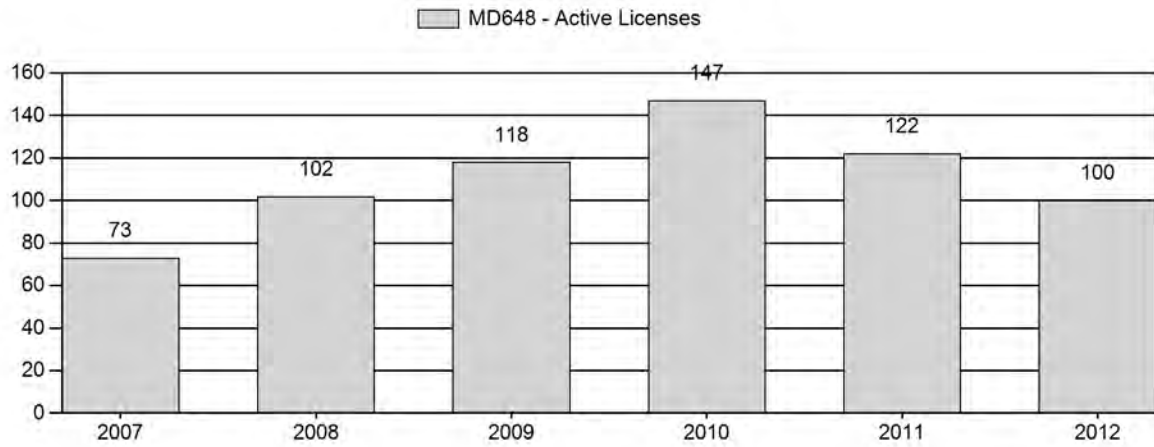
Number of Hunters



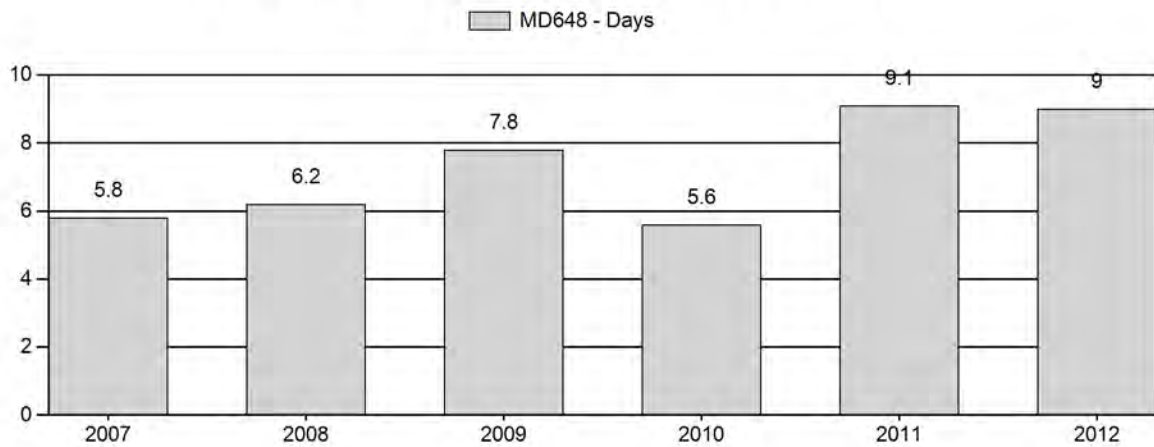
Harvest Success



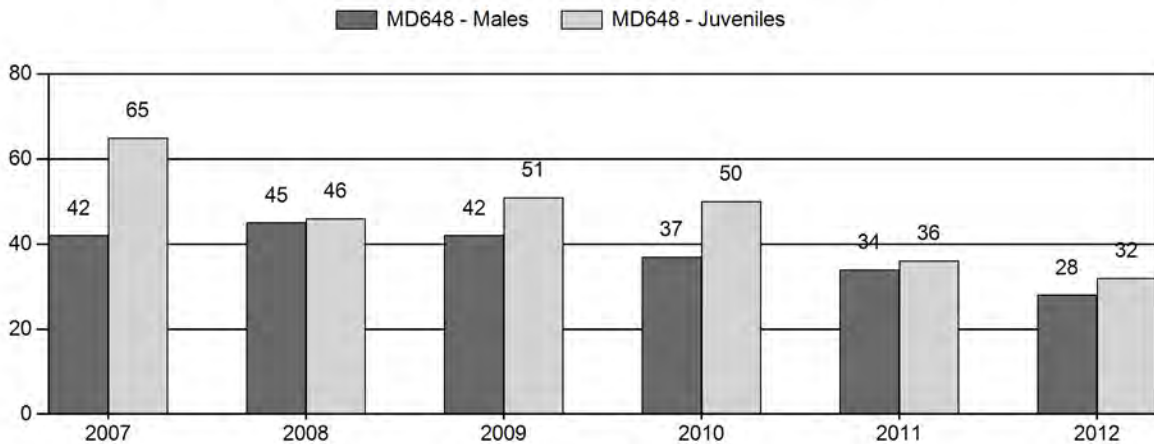
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



2007 - 2012 Postseason Classification Summary

for Mule Deer Herd MD648 - BEAVER RIM

Year	Post Pop	MALES				FEMALES		JUVENILES		Tot CIs	Cls Obj	Males to 100 Females				Young to		
		Ylg	Adult	Total	%	Total	%	Total	%			Ylng	Adult	Total	Conf Int	100 Fem	Conf Int	100 Adult
2007	1,514	11	29	40	20%	95	48%	62	31%	197	0	12	31	42	± 9	65	± 13	46
2008	1,558	24	44	68	24%	151	52%	69	24%	288	504	16	29	45	± 8	46	± 8	32
2009	1,700	25	51	76	22%	182	52%	93	26%	351	552	14	28	42	± 7	51	± 7	36
2010	1,797	13	35	48	20%	129	54%	64	27%	241	582	10	27	37	± 8	50	± 9	36
2011	1,610	10	31	41	20%	119	59%	43	21%	203	389	8	26	34	± 7	36	± 8	27
2012	1,651	4	29	33	17%	120	62%	39	20%	192	362	3	24	28	± 7	32	± 7	25

**2013 HUNTING SEASONS
BEAVER RIM MULE DEER (MD 648)**

Hunt Area	Type	Season Dates Opens	Closes	Quota	Limitations
90	1	Oct. 1	Oct. 31	75	Limited quota licenses; any deer
Archery		Aug. 15	Sep. 30		Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2012
90	1	-25
Total	1	-25

Management Evaluation

Current Management Objective: 2,600

Management Strategy: Special

2012 Postseason Population Estimate: ~1,700

2013 Proposed Postseason Population Estimate: ~1,700

Management Issues

The Beaver Rim mule deer herd has a population objective of 2,600 and has a special management designation. The population objective has been in place since 1994.

The landscape in this herd unit has remained relatively undisturbed compared to neighboring herd units. That said, vegetation throughout much of the area has been in poor condition for a number of years due to drought. In particular, the mid-2000's and 2012 were extremely dry. No vegetation data is collected in the herd unit, but casual observation indicated new growth was almost non-existent in 2012. As a result, deer body condition was quite poor entering the 2012/13 winter.

Habitat/Weather

This population was once significantly larger than it currently is. The population declined dramatically in the early 1990's following a catastrophic winter die-off. Deer numbers then languished for over a decade. The population showed signs of a slow, steady increase from 2000 through 2010. A harsh winter in 2010 followed by extreme drought in 2012 resulted in a population decline over the past 2 years. A spreadsheet model developed in 2012 estimates a current population of 1,700 deer.

Field/Harvest Data/Population

The spreadsheet model developed for this population appears to track perceived demographic trends over the past decade well, with one important exception. For 2012, the SCJ, SCA model was selected for use. Juvenile survival was fixed at 0.3 in both 2010 and 2012 to simulate a harsh winter and extreme drought. This model simulates a steadily increasing deer population from 1993 through 2010. As mentioned previously, field personnel believe this to be the case. The starting population in the model seems low at 291 deer. The simulation then predicts a decline in deer numbers following a bad winter in 2010. Again, this tracks with hunter and department personnel perceptions. Following a one year decline, the model predicts the population increased in 2012 and projects another increase for 2013. This prediction does not align with hunter or personnel perceptions. For the past 2 years numerous hunters have commented on a noticeable decline in deer numbers. The classification sample size declined steadily over the past 3 years due to a lack of deer. Additionally, the fawn/doe ratio in 2011 was quite low at 36/100 followed by another poor recruitment year in 2012 with a fawn/doe ratio of 33/100. Concurrently, the buck/doe ratio declined steadily for each of the past 5 years. The 2012 buck/doe ratio was only 28/100 and is below the lower special management threshold. Further evidence of a population decline is notable in harvest statistics for the area. Type 1 license success declined each of the last 2 years and was only 75% in 2012. This was the lowest success rate in over 5 years. Additionally, the days/animal increased dramatically in 2011 to 9.1. The days/animal remained high in 2012 at 9.2. This significant increase in effort came immediately after the 2010 winter and indicates a more substantial population decline than simulated in the model. Given these factors, the model should be regarded as fair.

Management Summary

Regardless of the model accuracy, this population is clearly below objective and hunt quality has declined over the past couple of years. The buck/doe ratio has been declining steadily and is now below the prescribed threshold. Given low recruitment in the herd unit the past 2 years, the buck/doe ratio is unlikely to increase dramatically over the next year. In response, Type 1 licenses will be reduced by 25 for the 2013 season to reduce buck harvest.

INPUT

Species:

Mule Deer

Biologist:

Greg Anderson

Herd Unit & No.:

Beaver Rim Mule Deer

Model date:

02/20/13

Clear form

MODELS SUMMARY				Relative AICc	Check best model to create report	Notes
CJ,CA	Constant Juvenile & Adult Survival	Fit	17	26	<input type="checkbox"/> CJ,CA Model	
SCJ,SCA	Semi-Constant Juvenile & Semi-Constant Adult Survival	17	28	28	<input checked="" type="checkbox"/> SCJ,SCA Model	
TSJ,CA	Time-Specific Juvenile & Constant Adult Survival	10	128	128	<input type="checkbox"/> TSJ,CA Model	

Population Estimates from Top Model											
Year	Posthunt Population Est.		Trend Count		Predicted Prehunt Population		Predicted Posthunt Population		Objective		
	Field Est	Field SE	Juveniles	Total	Juveniles	Total	Juveniles	Total	Juveniles	Total	
1993			91	461	88	31	171	291	2600	2600	
1994			79	325	79	32	172	282	2600	2600	
1995			116	357	115	41	184	341	2600	2600	
1996			125	410	125	63	208	396	2600	2600	
1997			133	468	133	73	235	442	2600	2600	
1998			196	570	196	91	262	549	2600	2600	
1999			246	703	246	110	309	665	2600	2600	
2000			168	719	168	146	362	676	2600	2600	
2001			162	745	162	157	392	711	2600	2600	
2002			174	792	174	166	416	756	2600	2600	
2003			251	907	251	180	442	873	2600	2600	
2004			280	1024	280	199	494	973	2600	2600	
2005			312	1141	312	226	550	1087	2600	2600	
2006			450	1376	450	274	609	1333	2600	2600	
2007			467	1584	467	332	715	1514	2600	2600	
2008			373	1654	373	369	816	1558	2600	2600	
2009			451	1799	451	367	882	1700	2600	2600	
2010			478	1937	478	355	964	1797	2600	2600	
2011			350	1721	350	291	969	1610	2600	2600	
2012			330	1733	330	303	1017	1651	2600	2600	
2013			494	1822	494	266	996	1756	2600	2600	
2014									2600	2600	
2015									2600	2600	
2016									2600	2600	
2017									2600	2600	
2018									2600	2600	
2019									2600	2600	
2020									2600	2600	
2021									2600	2600	
2022									2600	2600	
2023									2600	2600	
2024									2600	2600	
2025									2600	2600	

Survival and Initial Population Estimates

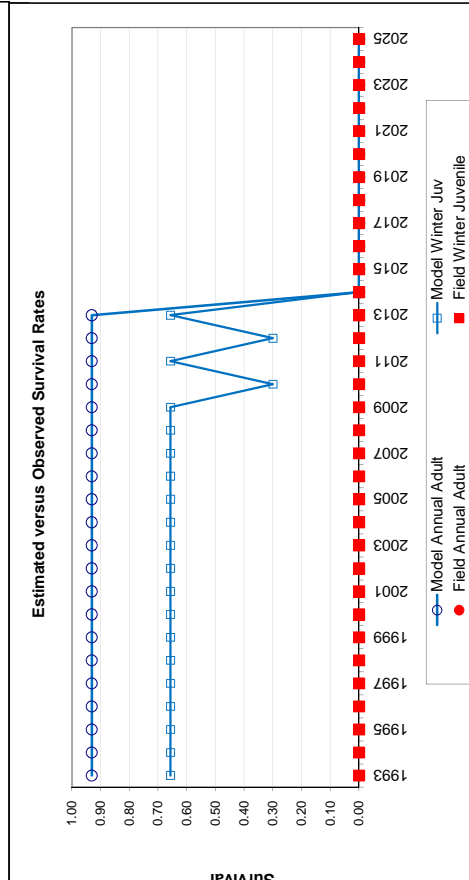
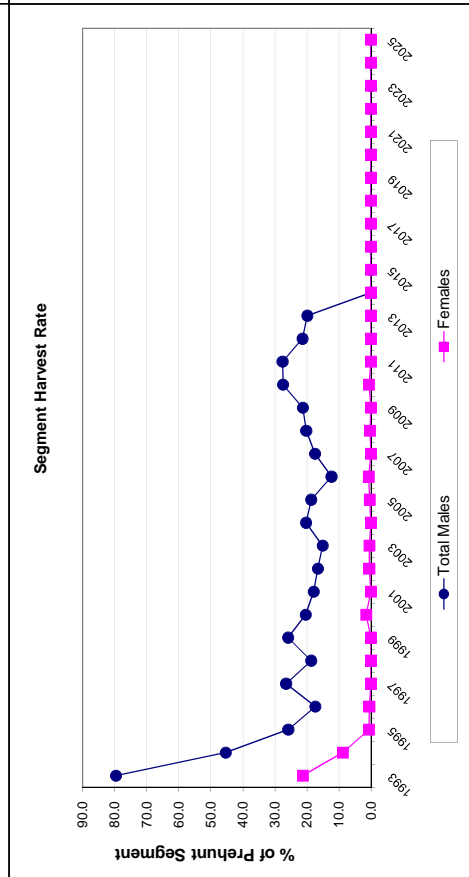
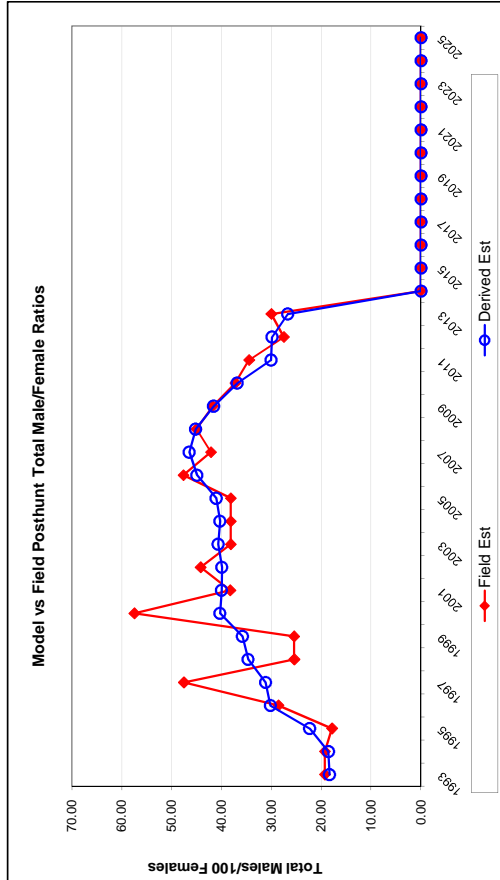
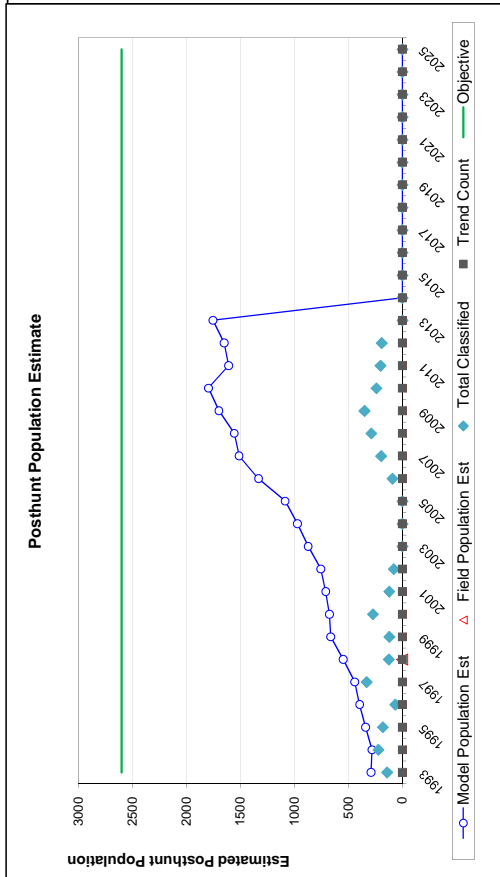
Year	Annual Juvenile Survival Rates		Annual Adult Survival Rates	
	Model Est	Field Est	Model Est	Field Est
1993	0.66		0.93	
1994	0.66		0.93	
1995	0.66		0.93	
1996	0.66		0.93	
1997	0.66		0.93	
1998	0.66		0.93	
1999	0.66		0.93	
2000	0.66		0.93	
2001	0.66		0.93	
2002	0.66		0.93	
2003	0.66		0.93	
2004	0.66		0.93	
2005	0.66		0.93	
2006	0.66		0.93	
2007	0.66		0.93	
2008	0.66		0.93	
2009	0.66		0.93	
2010	0.30		0.93	
2011	0.66		0.93	
2012	0.30		0.93	
2013	0.66		0.93	
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				

Parameters:		Optim cells
Juvenile Survival =		0.656
Adult Survival =		0.931
Initial Total Male Pop/10,000 =		0.003
Initial Female Pop/10,000 =		0.017

MODEL ASSUMPTIONS	
Sex Ratio (% Males) =	50%
Wounding Loss (total males) =	10%
Wounding Loss (females) =	10%
Wounding Loss (juveniles) =	10%

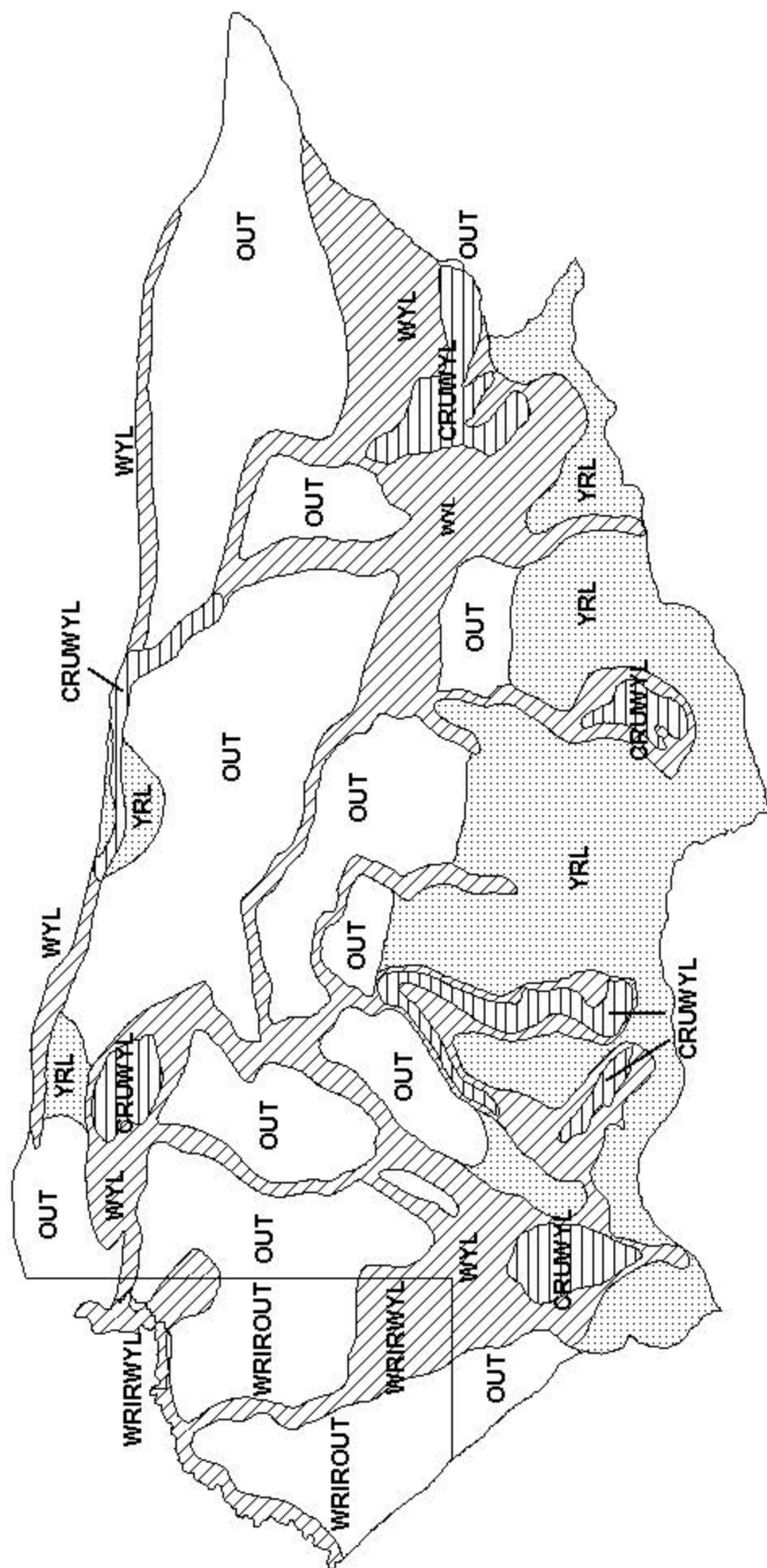
Classification Counts										Harvest		
Year	Juvenile/Female Ratio				Total Male/Female Ratio				Juv	Segment Harvest Rate (% of		
	Derived Est	Field Est	Field SE	Derived Est	Field Est w/o bull adj	Field SE	Males	Females		Total Males	Females	Total Harvest
1993		51.81	9.73	18.34	19.28	5.26	111	42	2	79.6	21.3	155
1994		45.93	7.05	18.54	19.26	4.12	24	15	0	8.8	8.8	39
1995		62.38	10.01	22.31	17.82	4.56	13	1	1	25.8	0.6	15
1996		60.00	16.56	30.17	28.57	10.24	12	1	0	17.4	0.5	13
1997		55.79	7.41	31.13	47.53	6.58	24	0	0	26.5	0.0	24
1998		74.60	14.38	34.65	25.40	7.11	19	0	0	18.7	0.0	19
1999		79.66	15.57	35.79	25.42	7.35	35	0	0	25.9	0.0	35
2000		46.27	7.11	40.30	57.46	8.22	34	5	0	20.4	1.5	39
2001		41.18	9.25	39.98	38.24	8.82	31	0	0	17.9	0.0	31
2002		41.86	11.75	39.91	44.19	12.17	30	2	0	16.6	0.5	32
2003		56.71	11.61	40.66	38.14	8.73	29	2	0	15.1	0.5	31
2004		56.71	11.61	40.31	38.14	8.73	46	0	0	20.3	0.0	46
2005		56.71	11.61	41.05	38.14	8.73	47	2	0	18.6	0.4	49
2006		73.81	17.48	44.92	47.62	12.94	35	4	0	12.3	0.7	39
2007		65.26	10.66	46.45	42.11	7.94	64	0	0	17.5	0.0	64
2008		45.70	6.64	45.16	45.03	6.58	85	2	0	20.2	0.3	87
2009		51.10	6.51	41.55	41.76	5.70	90	0	0	21.3	0.0	90
2010		49.61	7.59	36.84	37.21	6.29	122	5	0	27.4	0.6	127
2011		36.13	6.43	30.05	34.45	6.24	101	0	0	27.6	0.0	101
2012		32.50	5.99	29.84	27.50	5.41	75	0	0	21.4	0.0	75
2013		49.56	7.56	26.71	30.00	6.55	60	0	0	19.9	0.0	60
2014												
2015												
2016												
2017												
2018												
2019												
2020												
2021												
2022												
2023												
2024												
2025												

FIGURES



Comments:

END



Mule Deer (MD648) - Beaver Rim
 HA 90
 Revised - 4/95

2012 - JCR Evaluation Form

SPECIES: Mule Deer

PERIOD: 6/1/2012 - 5/31/2013

HERD: MD650 - CHAIN LAKES

HUNT AREAS: 98

PREPARED BY: GREG HIATT

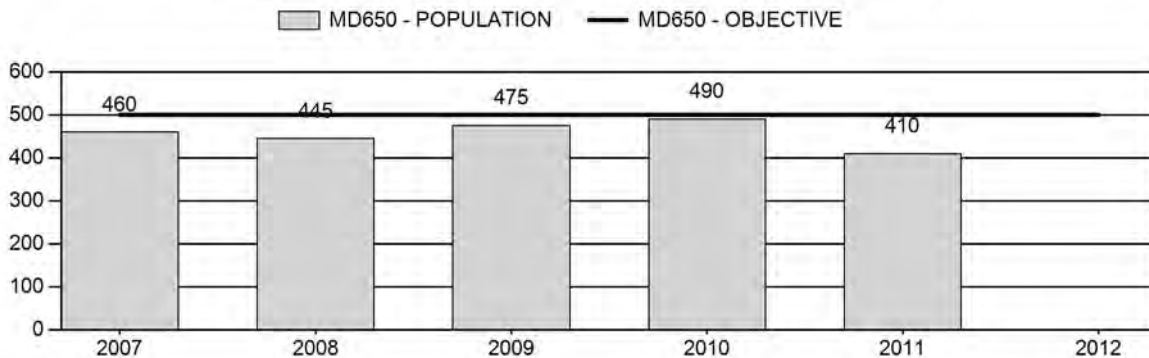
	<u>2007 - 2011 Average</u>	<u>2012</u>	<u>2013 Proposed</u>
Population:	456	N/A	N/A
Harvest:	48	23	25
Hunters:	129	129	135
Hunter Success:	37%	18%	19%
Active Licenses:	129	129	135
Active License Percent:	37%	18%	19%
Recreation Days:	513	612	665
Days Per Animal:	10.7	26.6	26.6
Males per 100 Females	20	0	
Juveniles per 100 Females	15	0	

Population Objective:	500
Management Strategy:	Recreational
Percent population is above (+) or below (-) objective:	N/A%
Number of years population has been + or - objective in recent trend:	2
Model Date:	None

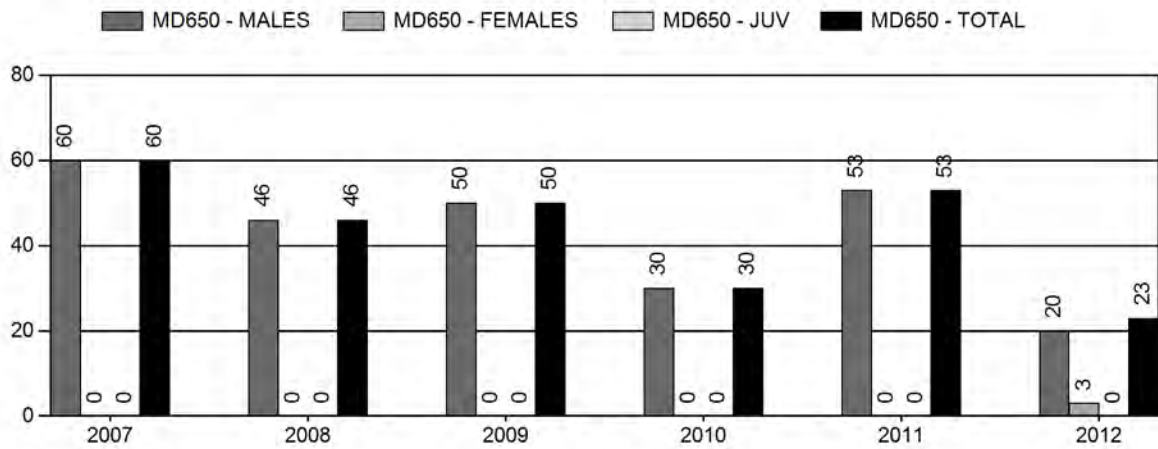
Proposed harvest rates (percent of pre-season estimate for each sex/age group):

	<u>JCR Year</u>	<u>Proposed</u>
Females \geq 1 year old:	0%	0%
Males \geq 1 year old:	0%	0%
Juveniles (< 1 year old):	0%	0%
Total:	0%	0%
Proposed change in post-season population:	6%	0%

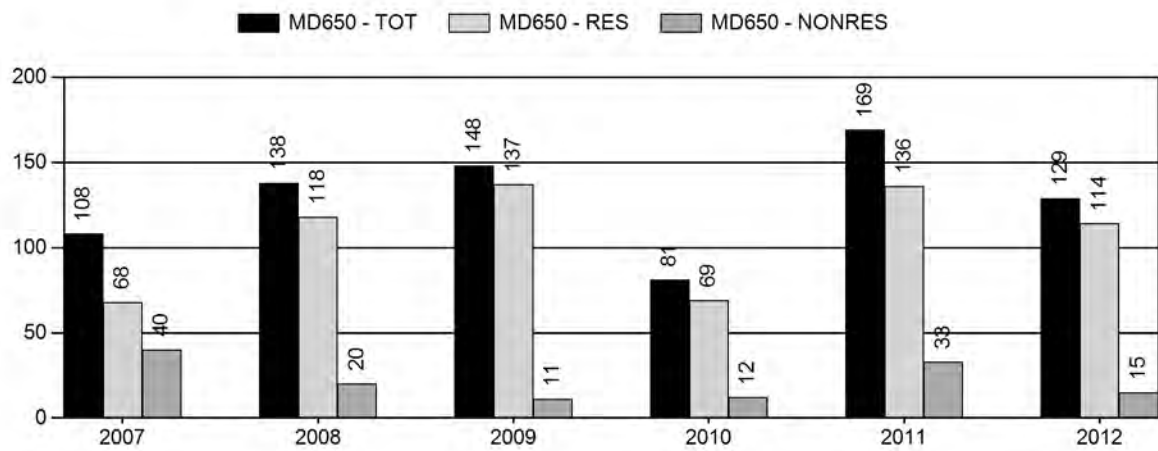
Population Size - Postseason



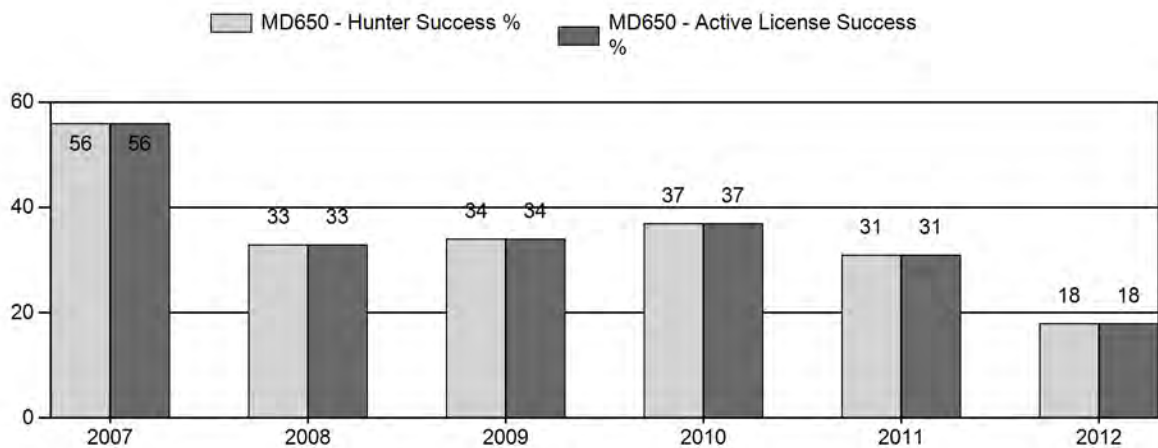
Harvest



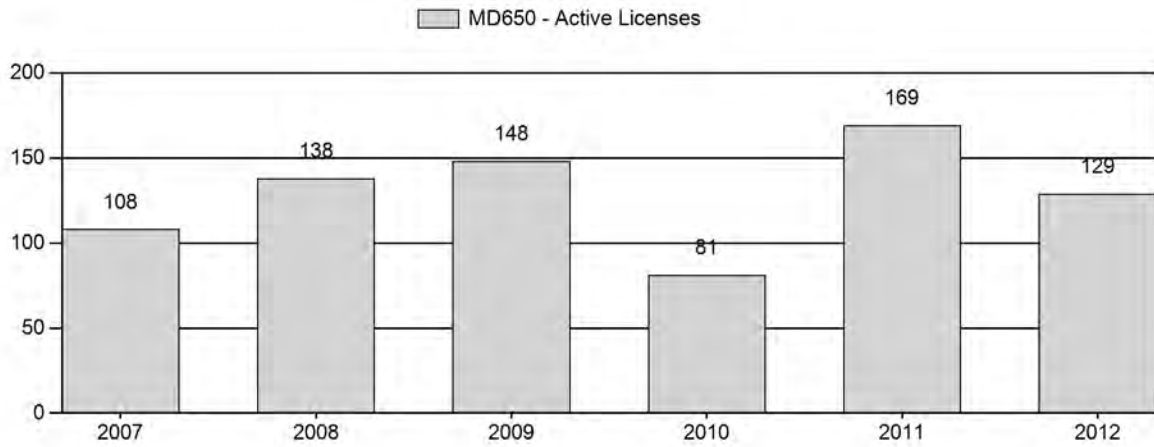
Number of Hunters



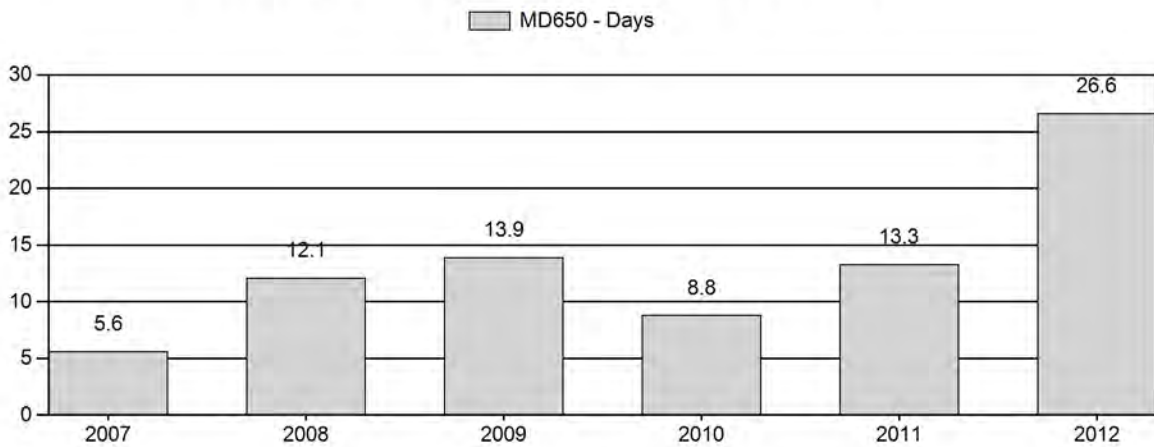
Harvest Success



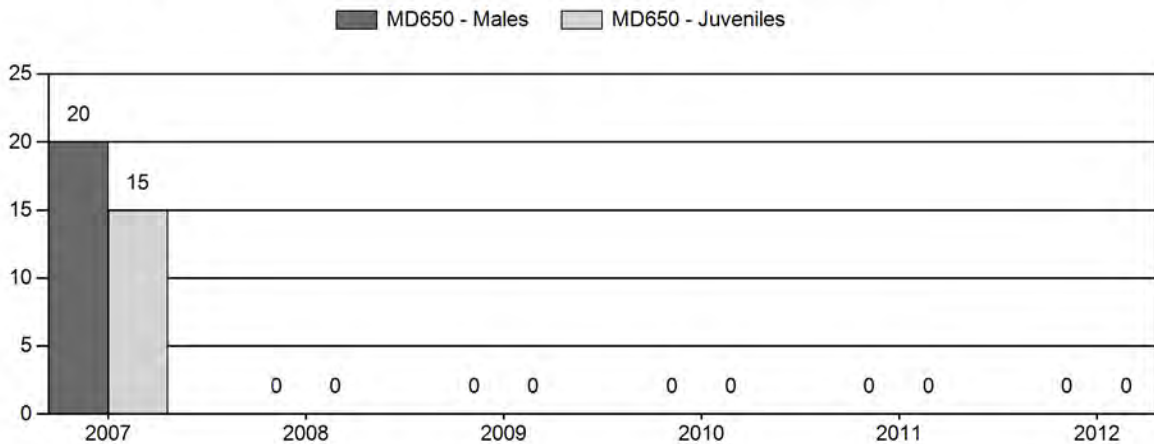
Active Licenses



Days per Animal Harvested



Postseason Animals per 100 Females



**2013 HUNTING SEASONS
CHAIN LAKES MULE DEER HERD (MD650)**

Hunt Area	Type	Dates of Seasons		Quota	Limitations
		Opens	Closes		
98		Oct. 15	Oct. 22		General license; antlered deer three (3) points or more on either antler, archery or muzzleloading firearms only
Archery 98		Sep. 1	Sep. 30		Refer to Section 3 of this Chapter

Hunt Area	Type	Quota change from 2012
98	Gen	No change
Total		

Management Evaluation

Current Management Objective: 500

Management Strategy: Recreation

2012 Postseason Population Estimate: N/A

2013 Proposed Postseason Population Estimate: N/A

The management objective for the Chain Lakes Mule Deer Herd Unit is a post-season population objective of 500 deer. The management strategy is recreational management. The objective and management strategy were last publicly reviewed in 1994.

Herd Unit Issues

Concern has arisen that improved range, accuracy and faster reloading times of modern in-line muzzle-loading firearms is increasing hunter success, rather than increases in numbers of deer. If true, a redefinition of legal weapons allowed in this season may be necessary in the future.

Weather

Based on data recorded in herds to the north and south, losses were presumed to be above normal during the 2010-11 winter because of a pre-Christmas snowstorm that laid a blanket of hard, crusted snow across most winter ranges that did not clear off until the second half of February, followed by cold, wet storms during spring. This was followed by drought conditions in 2012, with almost no precipitation throughout the spring and summer. Drought was classified as moderate in April, severe in May and then extreme for all subsequent months through February 2013.

Habitat

While no herbaceous habitat transects are established within this herd unit, herbaceous forage production is expected to have been minimal due to record drought. Only one shrub transect has been established near this herd unit, on the Chain Lakes WHMA, but was not read in 2012.

BP America transferred ownership of two solar water wells on Chain Lakes WHMA to WGFD. WWNRT allocated \$8,000 to WGFD for development of these two wells. Once developed, these wells will provide additional water sources for wildlife and help disperse domestic livestock that graze Chain Lakes WHMA.

Field Data

All classification samples for this herd have been statistically inadequate and no posthunt classification data were collected again this year. Dispersal of these deer in small bands across hundreds of square miles of sagebrush makes both aerial and ground classifications prohibitively expensive. Drought during 2012 reduced fawn production in neighboring herds and fawn production in this desert herd was presumably low as well. Combined with losses during the previous winter, the herd is expected to be well below objective size.

Harvest Data

General license seasons with weapons restrictions successfully allowed this herd to increase in the past and that strategy is continued in 2013. These combined muzzleloader and archery seasons, used for the past 30 years, have been popular with a steady segment of both resident and nonresident hunters, with 129 hunters in 2012.

Hunter success was low in 2012, at 18 percent, which was expected given the 3-point antler restriction. This was the poorest hunter success since 2004, following the severe 2003-04 winter. Three does were reportedly harvested, the first in 18 years, but it is not known if these were taken during the special archery season or by youth hunters in the regular season who were allowed to harvest any deer. In either case, antlerless harvest suggests legal bucks were more difficult to find than in previous years. Similarly, the average number of days hunted for each harvested deer jumped to 27 days, again the highest since 2004. These data support hunter comments about low numbers of deer being seen during the fall hunt.

Population

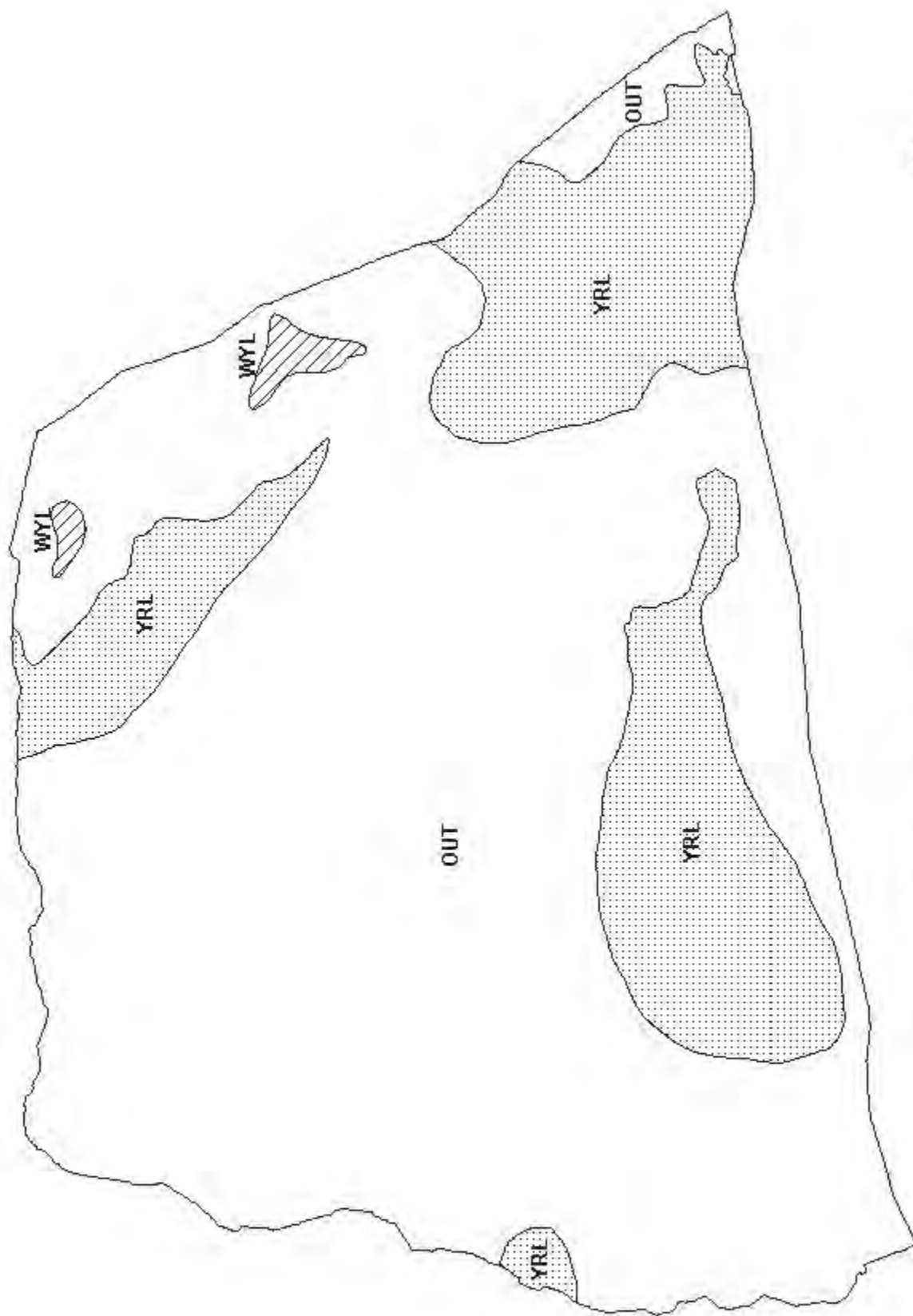
This herd consists of small bands of deer residing yearlong in pockets of suitable habitat in the eastern Red Desert. No reliable population estimate is available for this herd, nor is one likely under current manpower and budget constraints. A simplistic population model was developed that supported the reported harvests, but its accuracy could not be evaluated because of the absence of classification data and limited harvest field check samples. Instead, crude population estimates are obtained by assuming annual growth rates similar to those seen in neighboring herds, and subtracting reported harvests.

Management Evaluation

Deer in this desert herd unit have few options for finding green forage during dry conditions, with no high elevation habitats available. Body condition of the few harvested deer checked was

poor. Given the poor condition of animals at the end of fall, mortality is expected to be above average during the 2012-13 winter, despite moderate winter conditions.

Expected harvest from the 2013 season would be about 25 antlered deer by roughly 135 hunters. The opening date is the same used in the past 17 years, is consistent with the application booklet, and opens simultaneously with neighboring areas in Region E. As in 2012, the closing date is shortened one day to align with general license hunts in neighboring areas in Region E. As in 17 of the previous 18 years, most hunters during the regular season would be restricted to harvesting only antlered deer. With neighboring general license areas to the north and south again adding antler point restrictions in 2013, a similar 3-point restriction is applied in Area 98 to prevent this area and the private landowners who grant access from being overwhelmed by general license hunters. Opportunities for archery hunting will again be available during the October season in addition to the special archery season in September. Archers will be allowed to harvest any deer during September to follow the statewide standard special archery season.



Mule Deer (MD650) - Chain Lakes
HA 98
Revised - 3/94

